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Blame 'Blackouts' on Circumstances, Not Faulty Conditioner

BOSTON—The circumstances of the particular situation rather than any malfunctioning of an air conditioner was believed to have been the cause of the "blackout" and allegedly "narrow escape from death" of six members of a brokerage firm here who collapsed from lack of oxygen after a long session in a small, closed room.

Stories carried on the press wire services throughout the country said that "fire officials" blamed a faulty air conditioner. However, further investigation by AIR CONDITIONING, HEATING & REFRIGERATION NEWS revealed that the window air conditioner had been fully operating during the time that the men were in the meeting, and that

(Continued on Back Page, Col. 1)

Unitary Conditioner Shipments Up 10% In First Quarter

WASHINGTON, D. C.— Manufacturers' shipments of unitary air conditioners reported to Air-Conditioning & Refrigeration Institute for the first quarter of 1960 totaled 62,856 units, excluding coils, a gain of 10% over first-quarter 1959 shipments recorded by ARI.

It is estimated that units re-

(Continued on Back Page, Col. 3)

'Air Purifier' Use Queried In Baltimore

BALTIMORE — Cautioning consumers about the use of electronic air purifiers in their homes, the Baltimore Safety Council said ozone generated by the devices "is a highly poisonous gas."

Earl W. Smith, managing director, stressed that he was not talking about air conditioning units but about "air cleansing devices, sometimes called ozonators." He said the devices are advertised to relieve victims of hay fever, asthma, and sinus discomfort.

"But one aspect manufacturers don't advertise," Smith asserted, "is that ozone generated by air purifiers is a highly poisonous gas. "The fact is no secret among manufacturers, public health officials, and testing laboratories.

"The controversy centers around whether the amount of ozone produced is sufficient to poison humans. Manufacturers say it isn't; some others disagree."

Smith didn't condemn the devices outright. However, he said the local safety council "is con-

(Continued on Page 27, Col. 4)

JIPC Talks Taxes, Jurisdictional Problems

WASHINGTON, D. C.— Union jurisdictional problems were among topics discussed at a recent meeting of the Joint Industry Program Committee (JIPC).

Another subject was the tax liability situation of some contractors who are paying into union pension funds that have not yet been covered by signature of a formal declaration of trust.

The JIPC is composed of officials of six national trade as-

(Continued on Page 27, Col. 1)

Little Hope Seen for Early N. Y. Settlement

NEW YORK CITY, July 21— Although another bargaining session is scheduled to start some time today, there was not much optimism being expressed about a settlement in the near future of the strike of steamfitters which, together with a strike of sheet metal workers, has shut down installation work on large air conditioning jobs in New York City after following a walk-out on July 1.

Hope for any quick settlement

(Continued on Back Page, Col. 4)

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Beltz on Ice

Refrigeration this summer has become a television performer, *via* its role in NBC's 16-week Sunday night series, "Music On Ice."

Although the ice which forms the skating base for this hour-long show is not receiving credits afforded such two-legged performers as Jacqueline DuBief or comedian Ben Dova, it is, nevertheless, the fundament of the program.

A Detroit mechanical engineering and rink manufacturing concern, Charles R. Beltz & Co., is the actual producer of this vital component.

Ice plants are not new to Chuck Beltz. Ever since he manufactured his first Beltemp rink almost 20 years ago, he has been recognized as one of the leading designers and trouble-shooters for this "fringe" business.

Preparation for "Music on Ice" was no exception. Beltz was asked to manufacture and install a suitable surface by National Broadcasting Corp. officials in a mere *seven days.*

Fortunately, he was familiar with the peculiar demands of television ice. Nine years ago he had produced a rink for station WXYZ-TV of Detroit, which staged the first live televised ice show in the world.

That plant was assembled for a half-hour production by the Detroit Skating Club. It featured talent enlisted from the membership, and starred Detroit's then well-known international figure skater, Virginia Baxter.

(See rink description March 6, 1950, issue of AIR CONDITIONING & REFRIGERATION NEWS; and broadcast description, Jan. 8, 1951, issue.)

Beltz on the Spot

Friend Chuck admits that the challenge offered by NBC this summer probably was the most exacting in his experience. Much more was required than just producing a standard ice rink of a certain dimension.

Beltz was well aware that

(Continued on Page 12, Col. 1)

In the News This Week

Home Building May Rise In Second Half—FHA,VA

WASHINGTON, D. C.— Reports by the Federal Housing Administration and the Veterans Administration indicate that homebuilding may perk up in the second half.

FHA Commissioner Julian H. Zimmerman announced that the annual rate of FHA applications on new homes turned upward in June for the first time in 1960.

June applications for FHA mortgage insurance on new homes, existing homes, and multifamily projects all showed substantial increases over the May figures, the commissioner noted.

Applications on 23,700 new-home units in June represented a 6% increase over May, and, after seasonal adjustment, indicated a 9% increase in the annual rate to 241,000 units. Applications in January were at an annual rate of 264,000 units but by April and May had dropped to a low of 222,000.

The FHA also reported an increase in the prices it is getting for mortgages on the secondary, or resale, market, reflecting increasing supplies of housing credit.

The Veterans Administration announced that requests for new-home appraisals under its mortgage guarantee program reached a record high. The VA received 15,213 of these requests during June, an increase of nearly 6% from May and the highest recorded since last October.

Although the VA figures are not adjusted for seasonal trends, officials noted that appraisal requests generally decline a bit from May to June, so this year's increase was counter to the usual pattern.

•

Water May Be Less of an Industry Growth Factor

CHICAGO — Water supply may not be such a factor in determining which areas of the U. S., in particular, will get future industrial growth, as some authorities have predicted, says a well-known geographer.

"The data currently at hand suggest that growth in industrial water use need not be as large as predicted and may well be smaller," states Gilbert F. White, chairman of the department of geography at the University of Chicago. He added that there might not actually be large areas "whose growth is, or need be, stunted by shortage of potential water supplies."

Two reasons for his viewpoint are (1) the methods used in assessing the amounts of water to be used in industrial processes vary widely and are somewhat suspect; (2) industrial users have shown initiative and ingenuity in adjusting their processes and facilities to the available water supply.

•

Westinghouse Cancels Cooling Plant Vacation

STAUNTON, Va. — The one-week vacation shutdown scheduled to start Aug. 8 has been canceled by the Westinghouse air conditioning division plant here.

In making the announcement, R. K. Serfass, division manager, said: "Careful appraisal of our present high rate of sales indicates that we can best serve our customers this year by staggering vacations in our manufacturing, shipping, and marketing departments.

"Arrangements are being completed with most of our employes to maintain maximum output on through September.

"It has been the practice of the air conditioning division during the past several years to make a complete plant shutdown to enable our employes to take their vacations. This shutdown has always been accomplished with a minimum interruption in our shipments," Serfass said.

"The change in practice was necessary this year as a result of the high level of sales being received through the division's distributor organization."

•

Lawyers' Legal Scheme Pays for Courtroom Cooling

NEOSHO, Mo. — Newton County lawyers decided they'd had enough of sweating it out on long criminal and civil cases.

Judge Paul Carver, Walter Walker, president of the Newton County Bar Association, and 14 other county lawyers cosigned a note to air condition the circuit court room with two 4-ton units.

The note will be repaid on the basis of $1 when each lawyer files a petition, and $1 when he files an answer. The county court will pay for the wiring.

Postpone New Orleans 'Vacation' Indefinitely

NEW ORLEANS—A planned mass "vacation" by most of the local air conditioning and refrigeration contractors in protest against the city's failure to pass a licensing law has been postponed indefinitely.

The delay followed a "wide-open split" in industry opinion over the advantages and disadvantages of conducting the "walk-out." Several contractors have voiced disapproval of the plan, while others still contend they will form the protest.

The "Vacation" originally was to begin June 1, but already had been postponed two times when contractors announced this week they weren't sure if the "walk-out" would ever be held. It was last scheduled to start July 15.

Contractors who now oppose the protest say the blanket refusal to answer all service calls "smacks of a secondary boycott." They also express fears that the "walk-out" would serve only to alienate the public.

John T. Knight, Jr., Equitable Equipment Co., and one of the leading spokesmen for the industry, said he is fighting the planned protest because "nothing would be accomplished beyond making the customers unhappy."

In the first place, he said, such a walkout should be preceeded by a well-planned public relations program. He said the public deserved to know about the protest "at least a month or two in advance."

The contractors should have $5,000 for a newspaper, radio, and television campaign, he added, and "you know as well as I do that we don't have that kind of money."

At the same time, however, Philip J. Thompson, president of two local trade associations, said the majority of the city's contractors were still planning to go on "vacation." But the starting date for the protest was "very indefinite," he said.

The president of the Master Refrigeration & Air Conditioning Association and the Louisiana Refrigeration & Air Conditioning Contractors, Inc., he said "hundreds of men are hollering for the 'vacation.' But because we're no longer together on this, I don't know what's going to happen."

The proposed licensing law was first presented to the city council last October.

Cooling Off

Churches, Colleges, Courtrooms, Hospitals

Air conditioning is credited with an innovation at Plymouth Congregational church, Miami, Fla.

Announcing that the church's new air conditioning units would be used for the first time on July 17, the Rev. David J. Davis said they would permit two-a-morning Sunday services.

* * *

It's too hot for student riots in Fresno, Calif., so state Assemblymen Bert DeLotto and Charles Garrigus have gone to bat for them, appealing to Gov. Brown to allocate $76,000 from his emergency fund to air condition two buildings at Fresno State college being used for summer sessions.

Get ready for "solar lighting," men! In case you hadn't heard, solar lighting is the latest trend, we're told, to simulating outdoor lighting conditions in retail stores. Bellweather of the idea, the Starlite women's apparel store in Toronto, uses 11 watts of incandescent lighting per sq. ft., nearly triple normal lighting in stores.

Starlite found, as others will, too, this meant more air conditioning to take care of the extra heat load generated.

* * *

Warm-hearted, sweltering Oklahomans responded generously to an appeal by the Central State Griffin Memorial hospital in Norman for fans, air coolers, air conditioners—anything to help its 2,700 patients rest more comfortably this summer.

The hospital is not air conditioned. Its supply of fans was grossly inadequate to the job at hand. After a single appeal in the Oklahoma City papers, the hospital received two truckloads of air-moving equipment with more on the way.

* * *

It isn't often that hospitals get patients like Harry B. Mathews, Jr. It was a warm day in April when an auto accident brought Mathews to Barnes hospital in St. Louis. To reach his bedside, his wife passed by the surgical ward and made up her mind that something should be done about the heat there.

She consulted the hospital director and as a result Mathews —with a smile—coughed up $40,000 to air condition the ward.

Dr. Frank Bradley, the hospital director, noted that air conditioning means more than keeping patients comfortable in that ward. Many types of surgery upset normal body heat dispersal which creates problems that air conditioning helps solve.

* * *

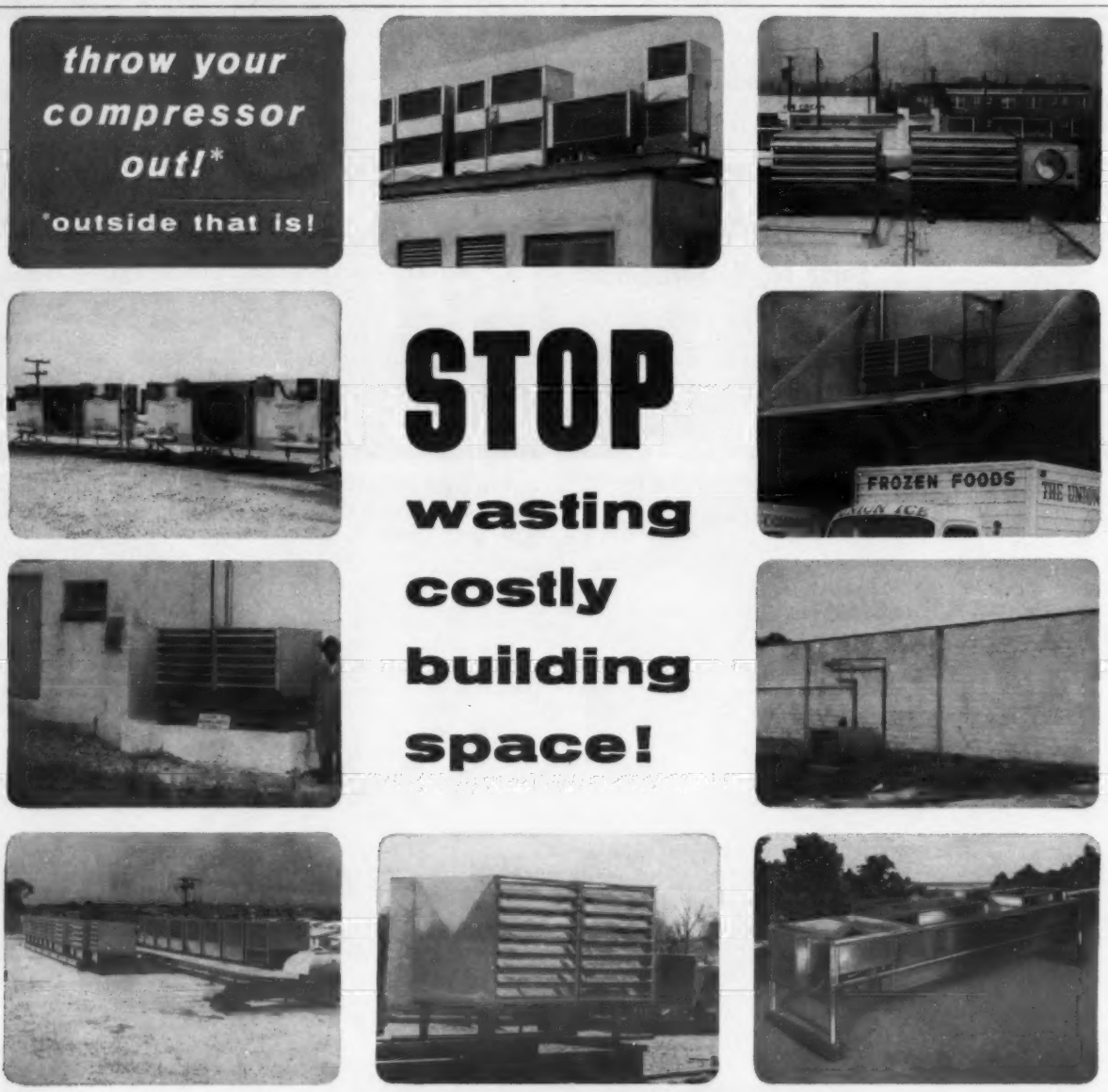
Knox St. in Dallas, self-labeled "Air Conditioning Capitol of the World," staged its third annual air conditioning carnival last month. The six participating dealers, all located in a three-block stretch, claim to sell 25% of the air conditioners in Dallas.

Gala carnival atmosphere featuring beauty queens, ancient cars, a "mystery man" who hands out silver dollars to people carrying air conditioning literature from one of the participating stores, and free balloons, candy, and gum for the children draws traffic from all parts of the city.

Some dealers promoted the sale of room units in pairs and one limited a special price deal to two per customer.

* * *

Thanks to the $2,000 contribution by the Sandusky County Law Library Association, the common pleas courtroom in Fremont, Ohio is being air conditioned. Cost of the project is $6,318.



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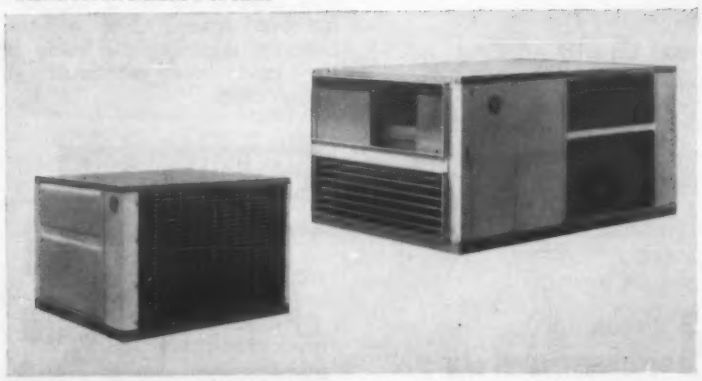
For information on G.E.'s complete heating and cooling line—and the dynamic lawn light deal, see your nearest General Electric distributor—or mail coupon.

GENERAL ELECTRIC

*Weathertron not available in all states



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GENERAL ELECTRIC COMPANY, Air Conditioning Dept., Tyler, Tex.

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Missile Lag

Jurisdictional Disputes, Basic Construction Delays, And the Military Itself Are Targets of Pentagon Move

WASHINGTON, D. C. — In one of several moves aimed at speeding installation of intercontinental missiles in combat sites, the Pentagon reportedly is working with the Labor Dept. on guides for settling jurisdictional disputes between construction craft and industrial unions, which allegedly have slowed down work.

In addition to labor unions, the over-all "speed-up" program is directed at contractors and the military itself, all of which, top defense officials say, have contributed to delays in missile installations. As a result, a new on-site management setup is said to be in the works.

Under this plan, each missile site will have its own project manager who will be given sole responsibility throughout the job supervising all work for the Defense Dept. Responsibility in the past has sometimes been vague and has changed as work progressed.

It's expected defense "troubleshooters" will play a bigger role in handling labor problems. Overtime will be watched more closely. Official deadlines probably will be set for contractors to finish major phases of their work to keep them on schedule. Tougher standards for selecting contractors are expected to be set by the Army Corps of Engineers, which hires firms to do basic construction on missile sites.

Under the system established by the Pentagon in putting up the first U. S. missile sites, things haven't worked out as smoothly as they were supposed to.

Basic - construction contractors were given 30 days to clear away their equipment when that part was done. Then the prime contractor for the missile itself was to install and check out the weapon and its equipment.

But there were delays in basic construction. One military source said many of the workers "just weren't sufficiently skilled because many places where we build sites aren't good labor areas."

In an effort to make up lost time, the Air Force allowed the prime contractor to start installing some of its gear before the basic construction job was completed. So construction contractors working for the Army Engineers and missile contractors working for the Air Force were often getting in each other's way. Management responsibilities were vague, too, according to defense officials.

Time-consuming union jurisdictional disputes flared when industrial unions that assemble the missile at contractor plants were sent to install gear at the launch sites, defense sources say. Building trades unions claimed this work was theirs.

These are some of the problems said to have caused delays in missile installations.

Pennsalt Starts 'Isotron 13' Production

PHILADELPHIA — Production of "Isotron 13" for low temperature environmental refrigeration applications has been started by Pennsalt Chemicals Corp.

The sixth in the company's line of fluorocarbons, Isotron 13 will be available in 80-lb., 23-lb., and 5-lb. cylinders.

"Isotron 13 (monochlorotrifluoromethane) can be used to produce temperatures below -100° F.," the company said. "It will be particularly useful in low temperature research and testing where exceptionally low environmental temperatures are desired such as for aircraft and missiles, electronics, automotive, petroleum, and chemistry."

Pennsalt refrigeration technicians report that Isotron 13 will have the same exacting control for low-moisture content as for its other Isotrons and that this standard is protected by factory sealing.

Additional information on Isotron 13 is available from Pennsalt representatives or by writing to Isotron Dept., Pennsalt Chemicals Corp., 3 Penn Center, Philadelphia 2, Pa.

Duo-Therm Output To Be Shifted to Lagrange, Ind.

LANSING, Mich. — Motor Wheel Corp. will shift production of its "Duo-Therm" heating and air conditioning equipment from here to a new plant in Lagrange, Ind. by Jan. 1, it was announced by M. F. Cotes, president and general manager.

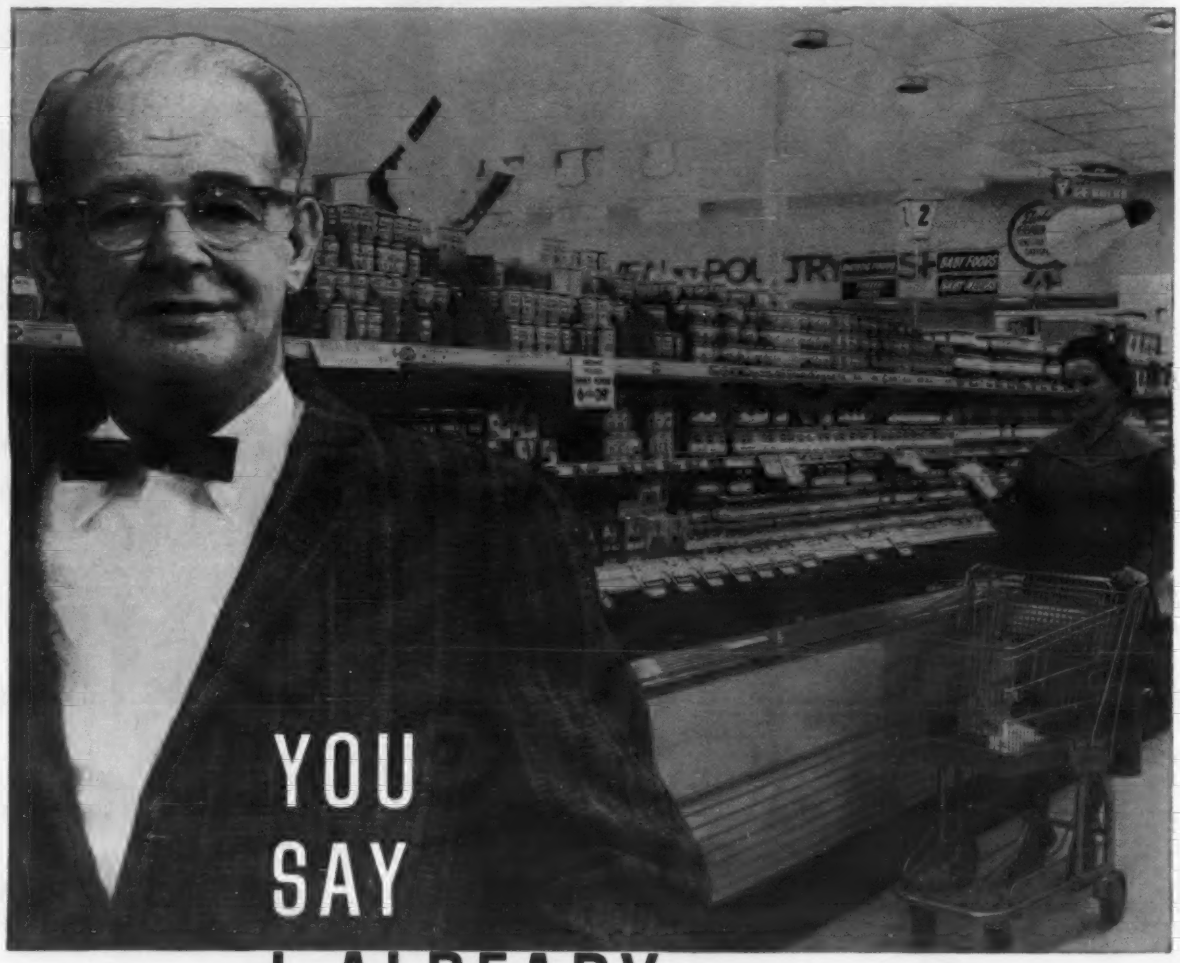
The company makes small-home and house-trailer heating and cooling equipment and also auto parts. About 150 of Motor Wheel's 2,500 Lansing workers are now involved in Duo-Therm equipment production.

Motor Wheel has acquired a site and will begin construction soon of a 120,000-sq. ft., single-story plant in Lagrange.

Cotes said the Lagrange site was selected as a strategic location to more efficiently serve the mobile home industry in Indiana and Michigan.

29 Cool Stories

NEW YORK CITY—A 29-story bank and office building to be erected at 250 Broadway, facing City Hall Park, will contain 515,000 sq. ft. of air conditioned space. Cost of the building, including the value of the land, was estimated at $20,000,000.



I ALREADY DEPEND ON TECUMSEH?

If you own a home refrigerator, freezer, or air conditioner there is a better than even chance that you have at least one Tecumseh compressor. That you are probably unaware of this fact is proof in itself of the quiet, trouble-free service you are getting. Equally efficient performance is available in Tecumseh's new line of commercial compressors and condensing units. Why not consider Tecumseh your next refrigeration opportunity?

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AIR CONDITIONERS, HEAT PUMPS — SELF CONTAINED AND REMOTE — GAS FURNACES — DEHUMIDIFIERS — ELECTRIC DUCT HEATERS — CONDENSING UNITS — A. A. H. I. RATINGS

NAPC Votes To Prepare Service Contracts For Air Conditioning, Refrigeration

CLEVELAND — Preparation of an air conditioning and refrigeration service contract form for use by its members is presumably planned by the National Association of Plumbing Contractors following adoption of a resolution to that effect at the group's recent 78th annual convention here.

Another resolution incorporating specific suggestions on type and frequency of such service was rejected by the NAPC membership on advice of the resolutions committee, however.

"The majority of the members of the National Association of Plumbing Contractors are engaged in the air conditioning business," noted the first-mentioned resolution, which also included the statements that "service is an integral part of the air conditioning business," and "air conditioning service contracts are becoming increasingly popular."

Accompanying this resolution was a service agreement proposed for study that reads in part as follows:

Text of Proposed Agreement

"2. The service contractor will:

"(a) Inspect the apparatus at least ..... times per year and perform the usual service operations, including shut down and start up, shown on a service check list and report.

"(b) Furnish the customer copies of a service check list and report with recommendations for improvements or needed repairs to the apparatus. Estimates shall be furnished on request.

"(c) Upon request instruct the customer in the operation of the apparatus and advise the customer approximately when the apparatus will be shut down and started up.

"(d) Furnish oil, grease, and protective paint as needed.

"(e) Furnish materials and labor for repairing or remodeling apparatus or system, such as parts, refrigerant, refrigerant oil, filters, filter solvent and adhesive, work on complimentary systems, such as drains, drain lines, water lines, steam lines, electrical lines and equipment, decorative painting, etc., only at the expense of and authorization by the owner.

"3. The customer will:

"(a) Operate the apparatus as instructed by the service contractor.

"(b) Extend all possible facilities of personnel, premises, and usual building maintenance material and tools.

"(c) Move any stock, fixtures, or partitions needed to facilitate the service contractor's work.

"(d) Promptly notify the service contractor of any unusual operating conditions.

"4. Service contractor will not work during overtime hours except at the expense of and authorization by the owner.

"5. Service contractor will not be held liable for loss or damage, consequential or direct, arising from the operation or failure of the apparatus or its controls, or for work done on it, or for material or labor delays, or for obsolescence.

"6. The service contractor shall deliver to the owner an approved surety company performance bond in the amount of $....., guaranteeing the true and faithful performance of this service contract."

The quoted material above, it must be remembered, was merely suggested for study by NAPC.

With the other resolution, which was rejected, there was a suggested set of "specifications" for air conditioning worth mentioning if only to illustrate some thinking among the regional groups that make up the national plumbing association.

These specifications would have set up a "guarantee" as given below:

Text of Rejected Resolution

"The mechanical contractor or air conditioning refrigeration installer shall guarantee all major equipment against factory defects and the installation against inferior workmanship for a period of one year after substantial completion acceptance by the architect or use by the owner."

Regarding service, these "specifications" stated:

"After the refrigeration system is installed, tested, and adjusted, it shall be serviced once each month as follows for one full cooling season, starting upon the substantial completion date or use by the owner. The installer shall not be responsible for accidental damage, abuse, normal wear and tear, elements, corrosion, nor other conditions over which he has no control.

"He shall instruct the owner's operator and shall furnish the owner copies of service check lists and report with recommendations for improved operation, maintenance, or needed improvements or repairs to the system after each monthly service visit. He shall be required to provide any lubricating oil, grease, and protective (not decorative) paint as needed.

"If the system is started originally after June 1, installer shall service the equipment monthly through the cooling season, properly shut it down for the winter, start it the following spring, and service it monthly from the original start-up has elapsed.

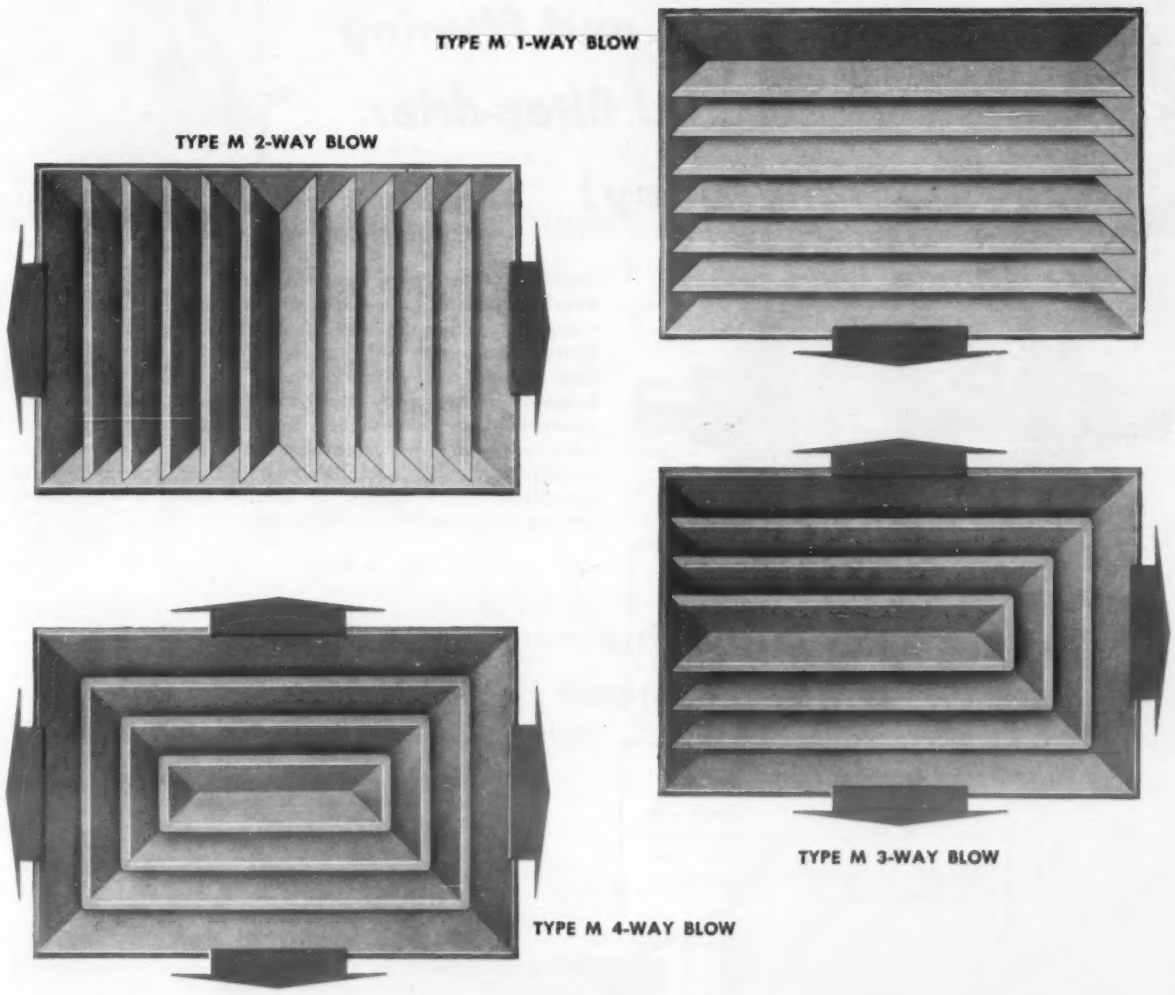
"If the system is put into operation before June 1, then this service obligation is completed when the system is closed down in the fall.

"After the final installation inspection and after the original installation of the system has been proven tight, any additional refrigerant and refrigerant oil required shall be furnished by the owner. The owner shall furnish such maintenance as, but not limited to, replaceable filters, permanent filter cleaning, belts, etc.," the resolution concluded.

The extreme flexibility of

Type M Multi-Pattern Diffusers

means custom-selected air distribution



Ideal conditions for the placement of ceiling diffusers do not always exist. Walls, partitions, exposed beams, supporting columns, light fixtures . . . big offices, small offices, corridors . . . are some of the factors that can contribute to the problem of correctly selecting and locating air distribution outlets.

With Tuttle & Bailey Type M Diffusers . . . you can select units that will distribute air in a one-, two-, three-, or four-way pattern . . . and you can select from a wide range of square and rectangular sizes. An added advantage . . . if and when requirements change in the conditioned space, it is an easy matter to install a core with a different air pattern arrangement.

T & B Type M Diffusers are attractively styled and can be furnished with four margin styles . . . beveled, flat, flush, or drop-collar . . . designed for various types of ceiling mountings.

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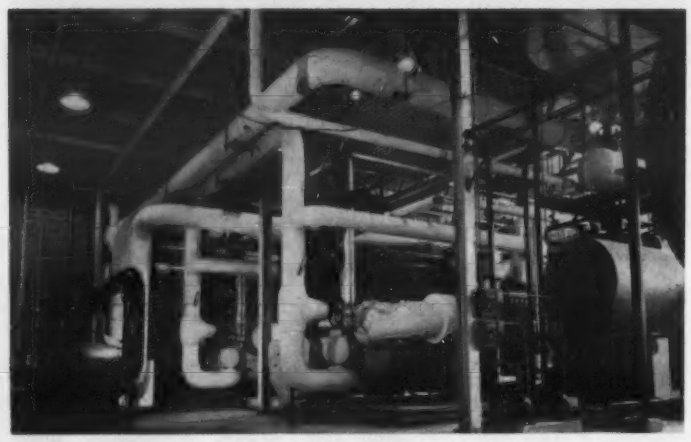
division of Allied Thermal Corp. New Britain, Connecticut

Tuttle & Bailey Pacific, Incorporated, City of Industry, California

Plant That's Had Cooling for 4 Years Finds That It Helps Maintain Good Employe Morale



COOLING UNITS in the central air conditioning equipment room at W-K-M plant operate independently. One, two, or three may be at work, depending upon the heat load to be overcome.

MISSOURI CITY, Texas—It's hard to put a cost figure on employe morale, but W-K-M Div. of ACF Industries, Inc. believes that air conditioning in its plant here has contributed mightily to maintaining good employe relations.

W. F. Phillips, plant engineer, pointed out that air conditioning was figured in the original design for the plant back in 1956.

"The benefits which would accrue to the company were weighed against the cost of operation and installation," he recalled, "and the decision was in favor of air conditioning.

"Experience thus far has proved this was a very prudent decision. Results have been extremely satisfactory both from the viewpoint of management and from that of the individual worker employed in the shop."

W-K-M manufactures valves and fittings for the oil, gas, chemical, and general industries in its 400,000-sq. ft. plant near Houston. The steel frame building is all on one floor, except for a small second story area in the office wing.

Manufacturing area is air conditioned with a 2,250-ton chilled and hot water system using three independently operating 600-hp. centrifugal compressors. Engineering department is cooled and heated by a 50-ton system, while the office area is served by a 75-ton system.

Manufacturing area is divided into 14 zones for air handling purposes while the 61,000-sq. ft. office and engineering area is split into 11 zones. Approximately 75° F. temperature is maintained throughout.

Penthouses Contain Cooling Equipment For Factory Areas

Air handling equipment for the factory is housed in six penthouses spaced along the roof. Each penthouse contains centrifugal type blowers, filters, replaceable media type filters, cooling and heating coils, and electronic controls for two or more zones.

Each zone, measuring approximately 180 by 140 ft., is served by two high pressure trunk ducts with short take-offs to ceiling type diffusers. The high pressure duct system was made necessary by the 20-ft. ceiling over most of the plant.

Smaller ducts not only took less ceiling space but permitted installing the lighting system at the 15-ft. level, giving employes better lighting.

Fans for the 14 zones have a total capacity of 585,000 c.f.m.

While the filter media in the penthouses is designed for automatic operation, plant technicians discovered that the life of the filters could be doubled by switching to manual operation. Same level of efficiency is maintained they claim.

Now the technician who makes the rounds of penthouses every hour includes rolling the filters as part of his routine.

The three hermetically sealed compressors and liquid chillers, along with two gas-fired Scotch Marine type boilers for heating, are located in the equipment room. A double suction pump, driven by a 200-hp. motor, circulates water at a rate of 324,000 g.p.h. Condenser water is circulated by a 250-hp. pump through a three-fan cooling tower.

Operated by automatic pneumatic controls, one, two, or three of the chillers operate as the heat load demands.

Control Room Permits Monitoring System From One Point

A control room permits air conditioning personnel to monitor the entire system and control conditions throughout the plant.

Air handling equipment for the engineering and office areas is housed in a separate penthouse atop the office section. Cooling and heating is accomplished the same as in the manufacturing area from a 75-ton centrifugal refrigeration unit and a 50-ton unit.

"Since the plant is located in an area where summer days can get rather uncomfortable because of both high temperature and high humidity, air conditioning helps maintain efficient production and more uni-

it's the balance that counts . .

. . that's why Drymaster®

with balanced drying and filtering

is the best engineered filter-drier

you can buy today!

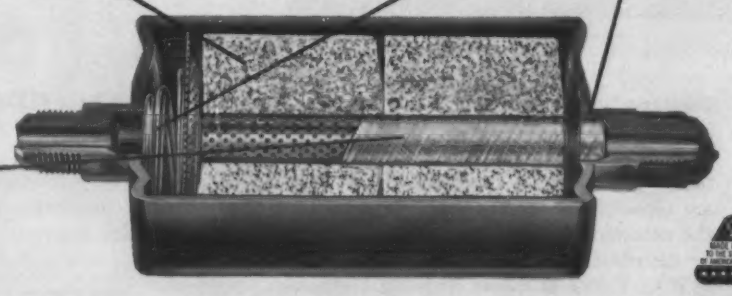
Drymaster Filter-Driers meet the most exacting needs of today's modern refrigeration system. Engineered and rated in every respect in accordance with ARI Standard 710-58, Drymaster does *both* filtering and drying perfectly . . . gives guaranteed balanced performance. To provide the versatility to meet the demands of every installation, Drymasters are available in a wide range of types, capacities and sizes with either male, female flare or copper solder-type end connections for easy installation . . . Drymasters are also available in combination with the Sightmaster Liquid Indicator.

Drymaster is engineered for today's modern refrigeration systems

HI-FI FILTER BLOCK DESICCANT—fully activated, pressure-molded briquette removes ALL moisture, acid, sludge and micron-size foreign particles. Unequalled in moisture absorbing capacity; surface and internal depth filtering is unsurpassed by comparable sized driers.

SHOCK-PROOF ASSEMBLY—Filter tube, alignment hub, conical spring and spacer at outlet end form cushion suspension for internal parts; heavy-welded body construction makes Drymaster Shock-Proof.

FILTER TUBE—perforated tube with monel screen makes a doubly effective safeguard against dirt and sludge.



For sizes, complete information and specification on Drymaster Filter-Driers, send for new bulletin. Just released.

273

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Exclusive Canadian Representative for Mueller Brass Co. Air Conditioning and Refrigeration Products.

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USE OF HIGH-PRESSURE DUCTS, which are relatively small and inconspicuous, enabled the air conditioning and heating system to push large volumes of air through the plant without severe penalty in overhead space. In the low bays—the majority of the plant—use of these ducts means that overhead lighting is never more than 15 ft. above the worker, an increase in lighting effectiveness for relatively less lighting equipment.

THE PLANT IS DIVIDED into 14 zones, each covering areas of the order of 25,000 sq. ft. Control is exercised at a monitoring panel in the central air conditioning room, where supervisor checks them frequently to maintain 75° F. level.

form output," a plant spokesman said.

Personnel department officials reported that many prospective employes tell interviewers they have come to W-K-M for jobs because the plant is air conditioned. Personnel interviewers, themselves, consider it a selling point to tell applicants that the entire plant is air conditioned, according to one of the interviewers. It's an aid in getting good people, he says.

"The type of operation at W-K-M requires skilled personnel since most of the work involves precise machining," the spokesman pointed out. "Air conditioning helps attract and hold these workers."

One official said that turnover of personnel is low. Plant officials agree that they cannot attribute this to the air conditioning, or prove that air conditioning is a contributing factor to the low turnover. But they do feel that it helps keep employes satisfied.

Plant Officials Believe Cooling Improves Product

As to the effect upon the precise machining required in turning out high quality valves, again, the plant officials cannot point to any change or lowering in the rejection rate—since the plant was air conditioned from the day it opened and production began—or to specific benefits in quality control. But they feel the air conditioning does help it.

Proper Choice of Exterior Walls Is SBA Leaflet Topic

WASHINGTON, D. C. — The proper choice of exterior wall construction for small industrial plants can save money in annual cost of heating, air conditioning, maintenance, insurance, and real estate taxes, according to a new leaflet issued by the Small Business Administration.

"Ultimate Cost of Exterior Walls" is number 71 in the SBA's series of Technical Aids for Small Manufacturers, and can be obtained upon request from all SBA offices.

The Aid discusses costs of wall supports, wall thickness, air conditioning and heating, maintenance, fire insurance, real estate taxes, and salvage. A chart showing comparative costs of three types of walls is included.

Frick Appoints Lawrence Long

WAYNESBORO, Pa. — Frick Co. has announced the appointments of Lawrence J. Long as office manager, Herbert L. Zeger as budget director, and Allan J. Beverley as branch manager for the Boston office.

Long has been with Frick since 1955. Zeger was formerly with Fairchild Engine & Airplane Corp. as chief auditor for the Aircraft & Missiles Div. Beverley, who succeeds the late Robert S. Ziehmn, served 16 years on application work with a large refrigerating machine builder and was with Canadian Ice Machine Co., Ltd. for seven years.

...on their way to another delighted user

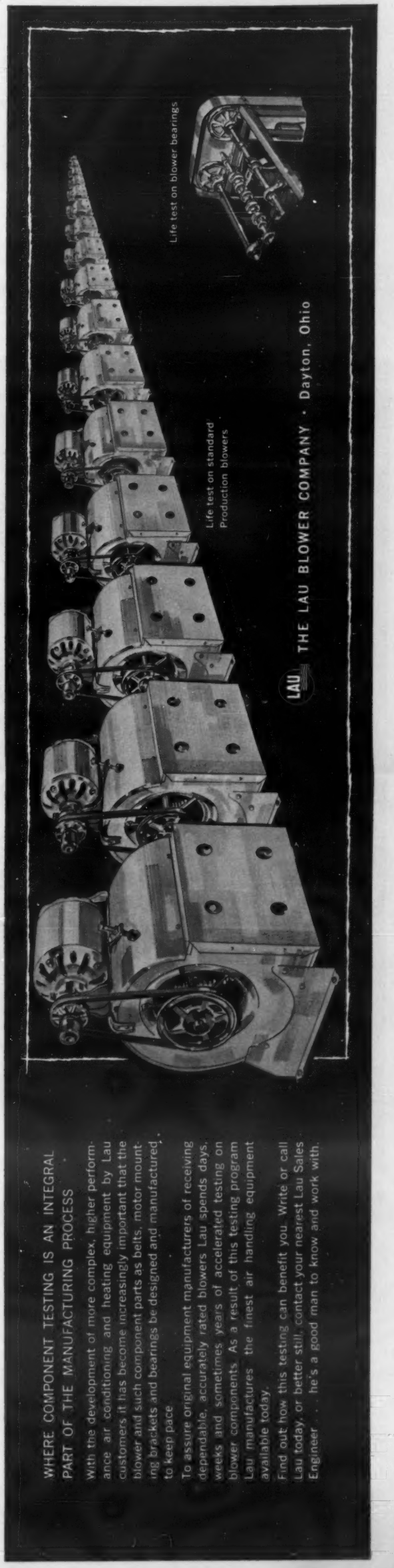
Name your need—there's a Lehigh Condensing Unit that will fit it to a "T". Hermetics from ⅓ to 2½ h.p. Open type from ¼ h.p. to 7½ h.p. Liquid receivers, too, 6" to 12" diameter, up to 60" long. And condenser receivers ½ to 5 h.p.

Tell us your requirements. You'll soon find it pays to rely on Lehigh.

LEHIGH

LEHIGH MANUFACTURING COMPANY, Division of Lehigh, Inc., Easton, Pa.
Manufacturers of Hermetic and Open Type Condensing Units; Compressors; Receivers; Condenser Receivers.

STEP FORWARD WITH LAU



WHERE COMPONENT TESTING IS AN INTEGRAL PART OF THE MANUFACTURING PROCESS

With the development of more complex, higher performance air conditioning and heating equipment by Lau customers it has become increasingly important that the blower and such component parts as belts, motor mounting brackets and bearings be designed and manufactured to keep pace.

To assure original equipment manufacturers of receiving dependable, accurately rated blowers Lau spends days, weeks and sometimes years of accelerated testing on blower components. As a result of this testing program Lau manufactures the finest air handling equipment available today.

Find out how this testing can benefit you. Write or call Lau today, or better still, contact your nearest Lau Sales Engineer . . . he's a good man to know and work with.

August Climatological Evaluation Chart Gives 1958 and 1959 Ratings for 31 Cities

NEW YORK CITY — Compared to "normal," the air conditioning "sales climate" last August for 22 of 31 cities listed in a climatological evaluation chart was excellent.

Fourteen of the 22 cities got a "superior" rating and eight a "favorable" rating. Seven others were rated about "normal." Only two got an "unfavorable" rating and none was rated "poor."

The chart is the last of four published by the NEWS this spring and summer. The charts comprise a climatological evaluation of air conditioning weather for the key months of 1959 (May through August) compared to normal and the corresponding month of the year 1958.

The evaluation has been made by Weather Trends, Inc., a private weather forecasting and weather-recording organization in New York City.

It has been published with the thought that it will be of value to air conditioning industry members who are gearing promotional efforts to industrial markets.

Weather Trends placed ratings of 5 (superior), 4 (favorable), 3 (normal), 2 (unfavorable), and 1 (poor) on the air conditioning "sales climate" for the 31 cities, and also provided a finer breakdown of the "normal" category, using 3— and 3+ as well as 3.

In addition, the air conditioning weather for each of the 31 cities during the period covered was rated as "much better," "slightly better," "better," "similar," "worse," "slightly worse," or "much worce" than in the corresponding month of 1958.

Compared to August of 1958, 22 of the 31 cities were rated as "better," "slightly better," or "much better" for last August. Four were rated as "similar," and only five as "worse," "slightly worse," or "much worse."

The 1 to 5 ratings are related to "normal" conditions based on long-term Weather Bureau records. Also reviewed and analyzed, and taken into consideration for the ratings, were such matters as:

1. Departures of average monthly temperatures, average maximum, and average minimum readings for each city and each month.

2. Number of days of 90° and over as compared to normal.

3. Duration and extent (extreme reading) of hot spells, if any, during each month.

4. A check on the number of wet days, humidity readings, and percentage of sunshine to normal to see if there were unusual departures from normal.

●

Climatological Evaluation

Legend for 1959: 5 — superior; 4 — favorable; 3 — normal; 2 — unfavorable; 1 — poor.

Legend — Comparison 1958: MB — much better; B — better; SB — slightly better; S — similar; MW — much worse; W — worse; SW — slightly worse.

Key City	AUGUST, 1959 Compared to: Normal	1958
Atlanta	5	MB
Baltimore	5	MB
Birmingham	5	B
Boston	5	MB
Buffalo	5	MB
Chicago	5	MB
Cincinnati	5	MB
Cleveland	5	MB
Dallas	3	S
Denver	3	SW
Des Moines	5	B
Detroit	5	MB
Houston	2	MW
Indianapolis	4	MB
Kansas City	4	B
Los Angeles	4	SB
Memphis	3+	S
Miami	3	MW
Minneapolis	4	B
New Orleans	3	S
New York City	4	B
Oklahoma City	3	S
Omaha	4	B
Philadelphia	5	MB
Phoenix	3	W
Pittsburgh	5	MB
Portland, Ore.	2	MW
Raleigh	4	B
Richmond	5	B
St. Louis	4	B
Washington D. C.	5	MB

Prepared by: Weather Trends, Inc., 550 Fifth Ave., New York 36.

In the dark all cats look gray. But in the white light of day, they all look different . . . white, black, calico, tiger . . . any similarity is gone.

Likewise, someone may tell you all refrigerants are alike. But they aren't . . . look underneath . . . where the differences show.

In the white light of experience, "Freon" refrigerants stand alone. They have been proved in 30 years of use and their quality has set the standard for the industry. The many services that go with "Freon" refrigerants such as technical and application data have helped contractors and service engineers build the industry as it is today.

Dollar for dollar, you *can't* get more than you get with "Freon". So why take chances? Accept no substitutes for "Freon". And "Freon" refrigerants are so easy to buy . . . available from air conditioning and refrigeration wholesalers everywhere. E. I. du Pont de Nemours & Co. (Inc.), "Freon" Products Division, Wilmington 98, Delaware.

Topped in gold and factory-sealed for purity

FREON®
premium quality
refrigerants
DU PONT
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

Quiet noisy piping!

QUIET-FLEX

REINFORCED FLEXIBLE RUBBER PIPE SECTIONS

Completely isolate pipe lines from pumps, centrifugal compressors, etc. Withstand working pressures up to 250 psi . . . continuous operating temperatures up to 250° F.

Sizes—¾" through 16" diameter, in lengths 6" through 50'. Available with integral molded rubber flanges or brass fitted threaded couplings.

Write for descriptive Bulletin RFP-10 and Vibration Engineering Data Book.

Representatives in Principal Cities of United States and Canada.

If it's a noise or vibration problem, get the right answer—quick—from

VIBRATION MOUNTINGS, INC.

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the quality tells . . . the quality sells

new JANITROL

WIN-SUM-MATIC

year 'round
air conditioner

COMPACT

Fits in as little as 3⅗ square feet!
Features Dura-Tube Gas Heating Heart
and powerful air-cooled cooling.

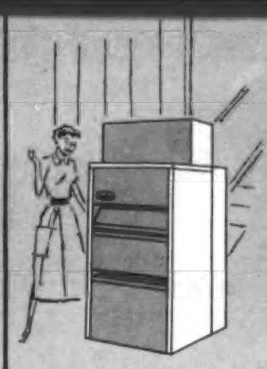
the Wraps are off...
and from this day on the new

JANITROL
WIN-SUM-MATIC

Year-round air conditioner
is the one to sell and grow with!

New Janitrol Win-Sum-Matic with front panels removed to show compact design and complete accessibility from front.

WIN-SUM-MATIC
Model CVC-85
with bottom
filter cabinet.



WIN-SUM-MATIC
Model CVC-85
with back
filter cabinet.

feature-packed for a mighty Sales Punch!
WIN-SUM-MATIC by Janitrol

New, Slim "Look of the Future"! New crisp, clean, uncluttered rectangular design with flush front enhances built-in effect . . . saves valuable floor space. New warm-tone neutral colors with gold accent complement decor of any room—harmonize with other appliances.

New, Compact Cabinet. Height of Win-Sum-Matic CVC120-85 (Combination L) is only 6'-8" including outlet plenum. Width 22½", Depth 40". Easily installed in basements with 7' ceilings. Plenum has knockouts on both sides and front for horizontal take-off.

Complete Accessibility from Front. All internal parts are easily reached, simply by removing front panels. Snap-lock panel design. No screws.

Exclusive Season Selector Control. An internal air bypass damper, operated manually or by motor automatically with control by thermostat, provides correct air for heating or cooling without blower adjustments. Damper directs air over heat exchanger for heating, and directly from blower into outlet plenum and evaporator for cooling.

Exclusive, Powerful 52 Series CONDENSING UNIT

New, high performance design with larger condensing coil that boosts efficiency and economy. Safe, upflow exhaust... rugged, weatherproof construction . . . acoustically insulated.

Take the very finest in year 'round air conditioning equipment and make it *even better!* That's what Janitrol has done and this all-new Win-Sum-Matic is the proof.

Here in one compact "package" is surpassing new beauty with wonderful new refinement and elegance of line and color . . . "the look of the future".

Here is new quietness of operation, with thrift that far exceeds accepted standards . . . a whole new concept of efficiency and dependability in performance.

Here is new ease and convenience in installation . . . new flexibility in the wide range of blower and motor combinations . . . new freedom of service and adjustment accessibility. Here, in fact, is everything you need and more to get your share of the booming air conditioning market.

Take a few minutes now to look over the features and advantages only Win-Sum-Matic offers. Then, ask your Janitrol representative—or mail coupon—for full details on how you, too, can sell and grow with Janitrol!

AIR FLOW DIAGRAMS
WIN-SUM-MATIC with Back Filter Cabinet

COOLING HEATING

SEASON SELECTOR (circled) allows straight-through air flow from blower to cooling coil for cooling . . . in winter, directs air through heat exchanger twice for maximum heat extraction.

Exclusive Dura-Tube Heating Heart

Warranted **20 years!** Born of the jet age! New A-19 armor coating, used to protect aircraft engine parts from corrosive, ravaging hot exhaust gases, is fused into all internal and external surfaces and joints—assures permanent sealing, new freedom from corrosion and burn-out. Twin-pass air flow design gives more heating capacity in less space, air passes over heat exchanger surfaces **twice,** resulting in higher heat absorption, true heating economy.

New Waterless Cooling Heart. Compressor-condenser needs only air and electricity, operates at lowest cost. Eliminates water supply and sewage requirements. Reduces service problems. Provides cooling with outside temperatures to 125° F.

New Quietness in Operation. Acoustically treated blower chamber, cushion mounted blower and blower motor, full-floating heat exchanger and air-cooled side panels provide a new concept quiet, smooth performance without annoying vibration or expansion-contraction noises.

Wide Range of Blower and Motor Combinations. Special, new blowers with alternate motors for each size of unit to furnish air deliveries for different cooling capacities in each model—greater installation flexibility.

Sizes to Heat and Cool Any Home. Models with heating input 80,000 to 200,000 Btu. Cooling output 22,000 to 76,000 Btu. AGA approved for natural, mixed or LP gas. (Ask about special approvals for commercial applications.)

Call WESTERN UNION Now!

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A Division of Midland-Ross Corporation
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WIRE COLLECT NOW
for proof . . . and a preview of the profitable future that's yours to enjoy!

132-Unit Apartment House To Feature Electric Heating and Air Conditioning

PHILADELPHIA — Plans were announced recently for the construction here of a 13-story apartment house which when completed "is expected to be the largest all-electric apartment house in the United States."

The 132-unit, 3½ million dollar apartment house will feature all-electric heat, cooling, lighting, and appliances. It will be named the "Iroquois" and will be located at 47th St. and City Ave.

The "Iroquois" may be the first multistory all-electric apartment house to be completed in the United States, according to officials of General Electric Co., which is supplying the electrical equipment and appliances.

No buildings of this type have been reported in other parts of the world, the G-E officials said.

They added that several other apartment houses — each with less than 100 units — are reported in the planning stage in this country, but that none are scheduled for the east.

Builder-owner, Leonard Polis, of Trevose, Pa., said groundbreaking for the "Iroquois" is scheduled for July. He said it will take about 18 months to complete but should be ready for occupancy in early 1961.

Architect is Leon Levin, of Philadelphia. Consulting engineer is William A. Lattanze, and the structural engineer is Philocles Anthopoulos, both of Philadelphia.

Built-In Conditioners, Baseboard Heating

The "Iroquois" will have one and two-bedroom apartments. Each room will have electric baseboard heating and a built-in air conditioner, with thermostat temperature control.

Also, each apartment will have an electric domestic water heater with thermostat control and an electric range, oven, refrigerator, garbage disposal unit, and automatic dishwasher.

A medical center and other professional offices will be located on the ground floor. Each of the above 12 floors will have 11 apartments each.

Electricity will be supplied to the apartment house by the Philadelphia Electric Co. through two underground cables in conduits encased in concrete. A transformer in the apartment house will regulate the voltage. Service will be primary with 13,200 volts.

The electrical system is designed to prevent total interruption in electrical service.

The increase in the use of electric heat in homes and apartments was underscored in a statement made recently by George T. Bogard, manager of General Electric's newly-formed Residential Market Development Operation (RDMO).

Bogard predicted there would be 4,000,000 all-electric homes and apartments in the United States by 1970.

The department headed by Bogard was recently formed by General Electric as part of an industry-wide campaign to encourage all-electric construction.

Flip Chart Sales Training Course For Electric Heat Selling Offered

NEW YORK CITY — "Comfortable Electric Warmth—For The Entire Home" is the title of Edison Electric Institute's all-new flip chart sales training course on residential electric heating.

The course is now ready for distribution to electric utility companies and trade allies. The charts which make up the course are designed as an information course for utility employes, archtects, contractors, etc., and as a sales training course for all who sell electric heating.

EEI said the course "is a comprehensive study of the many benefits of electric home heating and was created to suggest ideas and ways to sell electric heating. The course emphasizes ductless-type electric heating and is non-technical."

The Home Heating Program comes in three forms: (1) Complete electric heating sales training and information course, $75; (2) electric heating information portion only, $50; (3) combination of electric heating and appliance sales training courses, $149.50.

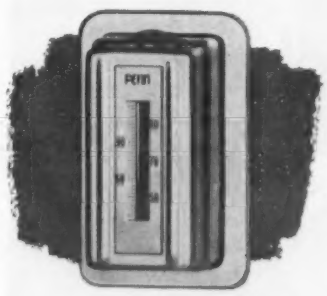
An illustrative brochure describing the courses and what comes with each is available by writing to Sales Div., Edison Electric Institute, 750 Third Ave., New York 17, N. Y.

REPRINTS SELLING FOR PROFIT.

By Frank Klein—Only $1.00 ea. Clip this ad and mail with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

HEAT CONTROLLER, INC.
Jackson, Mich.
Comfort-Aire
COMPRESSOR CONDENSER UNIT
AIR CONDITIONERS — HEAT PUMPS — SELF CONTAINED AND REMOTE — GAS FURNACES — DEHUMIDIFIERS — ELECTRIC DUCT HEATERS — CONDENSING UNITS

PENN TYPE 426X
MAKES YOUR HEATING-COOLING
FAN COIL UNITS TRULY AUTOMATIC



Use the inexpensive Series 872X Heating-Cooling Thermostat with the Type 426X Changeover Control.

Don't make users play guessing games for comfort with your heating-cooling fan coil units. Penn Type 426X changeover control turns the job over *automatically* to the heating or cooling side of the combination thermostat. Sensing plate feels change in circulated water temperature —provides fast, positive shift in thermostat function. Unaffected by high or low temperatures encountered in unoccupied, non-conditioned areas. Setting is not shifted by electrical load. Unique construction provides single strap mounting in any position . . . assures *dry* operation in the most humid locations. Concealed screwdriver adjustment and adequate wiring space make the Type 426X a favorite with installers. For your next job, use Penn Type 426X.

PENN CONTROLS, INC. Goshen, Indiana
EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.
AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1)

television lights are perhaps the hottest in the world, and that the schedule of rehearsal and subsequent taping (the program is prerecorded) would require a plant which would be subjected to a new maximum of heat and time obstacles.

Actually the rink, which is housed in the NBC-TV studios in Brooklyn, is used four consecutive hours at one sitting.

While there is a brief respite between the rehearsal and taping, the lights seldom are dimmed, and the ice itself gains little relief from continuously intense heat.

The lights, 700 to 900 in number, generate 1,500,000 B.t.u. To combat this hazard, Beltz utilized knowledge gained from previous television rinks he had constructed, plus many refinements which the past nine years have brought to his product.

His equipment basically begins with a Beltemp B 65-S Icemaker, and two 50-hp. motors. Built into a portable trailer are two 10-hp. brine pumps with a self-contained cooling tower.

Completely automatic, this system is controlled by a thermostat similar to the type used in a normal household heating system. A high-flash-point, noncorrosive, anti-freeze brine solution is employed, also.

The rink is fed by Beltemp reverse-returning headers which distribute Freon-22 through light-colored plastic ice rink tubing with three hairpin return bends per circuit.

However, the heat and time problems were not the only dilemmas which confronted friend Beltz. The bandstand for this show is an added mounting which weighs close to 10 tons, plus the musicians!

The rink must support this mobile bandstand at any spot, inasmuch as its position varies during the show.

Yesterday, If Not Sooner

After Chuck received the commission to produce this rink, it required him only 48 hours to assemble the components and ship them to Brooklyn.

He personally flew East to supervise the installation, and to solve several last minute problems which arose. For example: An unusually close weaving of pipe was necessary to combat a thermal load which hadn't been specified.

Within a week the first TV network ice show was in rehearsal.

"Certainly the three problems posed by speed, television lighting heat, and the weight of the bandstand, made this the most challengingly interesting problem I've ever faced in artificial ice rink construction," Beltz retrospects.

Chuck delights in cracking nuts of this kind, and probably he is the one man around who quickly could produce such a readily happy solution. The end result is pleasant summer viewing, and is eliciting sponsor interest on an annual basis.

While idiot-box watchers already have adopted Jacqueline DuBief as a charming star in her own right, increasingly they are becoming aware that the Beltemp rink probably is a star of equal magnitude.

Incidentally, Chuck Beltz is a down-the-street neighbor of

From the Sublime to the . . . . .

. . . Ridiculous on Ice

If you want more than just a tube

Imagination . . . research . . . new product pioneering and development . . . are these some of the things you look for in a supplier?

If they are . . . and if your company uses tubing, then you'll find that Wolverine Tube is exactly the kind of supplier you want.

In addition to meeting the present needs of its customers, Wolverine Tube is also working steadily toward the future. Wolverine engineers and technicians have the industry's most complete Research and Development facilities right within their own company. They are constantly delving into new types of tubing and working with new metals and alloys.

Inflatable tubing, so flat it resembles a ribbon . . . the ability to make unusually long lengths of tubing in special metals . . . tubing and shapes made from columbium, tantalum and molybdenum . . . these are but some of the new things coming from Wolverine's R&D program.

If your management is taking a long look at tomorrow . . . and beyond . . . then Wolverine Tube can help bring your plans to fulfillment . . . particularly in the field of tubing and heat transfer. Wolverine's experience, engineers and research and development facilities are ready to help solve your problems. May we hear from you soon?

Tomorrow's metals are being worked at Wolverine Tube today

WOLVERINE TUBE
DIVISION OF
Calumet & Hecla, Inc.
DEPT. C, 17246 SOUTHFIELD RD., ALLEN PARK, MICH.
Manufacturers of Quality Controlled Tubing

PLANTS IN DETROIT, MICHIGAN AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES

HIGH VACUUM
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Expert technical assistance is available from Airserco to help you solve the "tough" ones.
SEE YOUR WHOLESALER OR WRITE US.
AIRSERCO MFG. COMPANY
435 Melwood Ave. • Pgh. 13, Pa.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

"Dope." In his capacious backyard there's a Beltemp ice rink on which Chuck's kids and other neighborhood youngsters play hockey all the year-round, and "under the lights."

Movie Suggestion

While we're on the subject of show business, here's a thought for the movie makers. (No charge.)

How about remaking Eliza Alcott's chaste "Little Women" with the following cast:

Beverly Aadland, Tuesday Weld, and Cheryl Crane? ! !

Add Definitions

Old timer: Man who can remember when a male quartet didn't consist of four crooning baritones.

Stories of the Week

At a press conference an admiring female reporter from Maine asked Senator Margaret Chase Smith a "leading" question.

"What would you do," she anticipated, "if you awoke one morning to find yourself in the White House?"

"I'd apologize to the President's wife," snapped the lady Senator from Maine, "and go home."

Thief held modern artist Pablo Picasso at bay with a gun while he collected considerable loot. Picasso told police he could sketch a picture of the robber from memory, and did. Result:

French gendarmes arrested the minister of banking, a mother superior, a refrigerator, and the Eiffel Tower.

Quotes of the Week

How to succeed, if you think it's worth the trouble: Hitch your wagon to a star, put your shoulder to the wheel, keep an ear to the ground and watch the handwriting on the wall.

We can't help feeling sorry for the modern young man. In our day, all you had to do was promise a girl indoor plumbing and electric lights; but now it's a Ferrari and a swimming pool. —BILL VAUGHAN.

Individual man seems to be giving way to mass man. The motion picture dictates our styles and sometimes our morals. The columnist provides us with premasticated ideas. Book clubs select our reading. Our business is done with chain stores and chain banks. We live under a dictatorship of psychological pressure and social atmosphere. Wherever you look, the mass man is encroaching on individual man.—L. R. ELSON.

Americans currently spend more money on repairs to their radio and television sets than they do on all kinds of books.—JACOB M. PRICE.

The youth gets together his materials to build a bridge to the moon, or, perchance, a palace or temple on the earth; and, at length, the middleaged man concludes to build a woodshed with them.—THOREAU.

AiResearch Bows Ground Air Conditioner

LOS ANGELES — An "extremely compact, lightweight" ground air conditioner with a cooling and heating capacity of 90,000 B.t.u.h. has been produced by The Garrett Corp.'s AiResearch Mfg. Co. here, the firm announced.

"The air conditioner, composed of easily serviced components, weights only 521 lbs. enclosed in a 56 by 51 by 27-in. envelope," it was stated. "In this unusually small package the 7.5-ton air conditioner has numerous ground support applications in vans, shelters, and trailers.

"For a high degree of reliability a hermetically-sealed, motor-driven centrifugal compressor was designed for the air conditioner. It is similar to the compressor AiResearch produces for the Boeing 707 and Lockheed Electra." Refrigerant-114 is used.

SIMPLE CONTROL PANEL on the new AiResearch ground air conditioner enables the operator to select automatic heating or cooling and adjust the mode of operation.

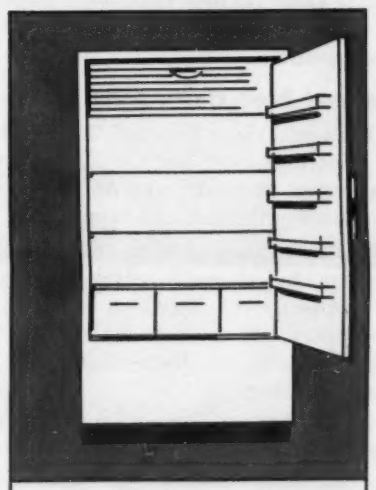
The major elements of the air conditioner, which is said to have a 2,000-hour service life, are an air system, a refrigeration and heating system, a control system, a power receptacle, and a housing and skid frame base.

"The air system supplies 3,500 c.f.m. of ventilating air," it was pointed out. "The refrigeration and heating systems provide cooling or heating, whichever is required for the ventilating air being drawn in, circulated, aand discharged by the air system.

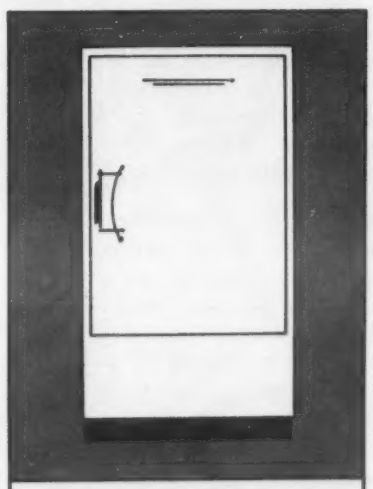
"The control system regulates the operation of the air conditioner to provide cooling or heating as required. The power and cable assembly connects the air conditioner to a 400-cycle, 3-phase, 120/208-volt power supply."

NEW genetron® BLOWN URETHANE FOAMS

Increase Refrigerated Storage Capacity ...Reduce Insulation Costs!



More storage room inside!



No increase in size outside!

Now you can get twice the insulation value from urethane foam with "Genetron" blowing agents! A 1″ thickness of "Genetron" blown urethane foam has the same insulation value as a 2″ thickness of urethane foam blown with carbon dioxide – or 3″ thickness of glass wool!

Here's good news for every manufacturer of household, industrial and commercial refrigerator and freezer equipment. By using urethane foams blown with "Genetron" halogenated hydrocarbon gases you can reduce the thickness of insulation walls by one-half, even two-thirds. You'll increase the amount of refrigerated storage space . . . slash raw material costs! "Genetron" blown foams provide *twice* the insulation value of carbon dioxide blown urethane foams. As much as *three times* that of conventional glass wool. And "Genetron" blowing agents offer many "working" advantages, too!

Shorter cure time. "Genetron" blown foam will cure rapidly at room temperature and if oven cured for a few minutes the foam may be handled immediately.

Larger molded forms. Lower temperatures of "Genetron" blown foams during rising and curing make it possible to prepare larger molded forms with no risk of charring.

Increased efficiency. With "Genetron" blowing agents all the isocyanate is used for polymerization and not to produce the blowing agent.

Many other desirable properties! Including low boiling point . . . favorable heat of vaporization . . . nontoxicity . . . non-flammability . . . compatibility with urethane, other foamed plastics . . . inertness towards finished product.

Send coupon now for technical information on efficient, economical "Genetron" blown foam insulation.

Other major components used in the production of urethane foams are also produced by Divisions of Allied Chemical. Namely, Nacconate® diisocyanates by National Aniline Division; resins by Plastics and Coal Chemicals Division.

Allied Chemical

GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N. Y.

GENERAL CHEMICAL DIVISION AR-70
Allied Chemical Corporation
40 Rector Street, New York 6, N.Y.

☐ Please send your comprehensive bulletins, *"Genetron Blowing Agents for Rigid Urethane Foam"* and *"Determining Genetron Content of Rigid Urethane Foam"*

☐ Please have a representative call.

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Company _____

Address _____

City _____ Zone ____ State _____

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AIR CONDITIONING HEATING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

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VOLUME 90, NO. 13, SERIAL NO. 1,635, JULY 25, 1960

They'll Do It Every Time

by Jimmy Hatlo

THEY TRADED BUCKO!! CAN YA IMAGINE THAT?! THERE GOES THE PENNANT! AFTER ALL HE DID FOR THE TEAM! WELL, I'M THROUGH ROOTIN' FOR 'EM! THEY TRADED BUCKO!!
WHAT'S CUBEB CRYIN' ABOUT? DID HE LOSE SOMEONE NEAR AND DEAR?
CUBEB BETTER WORRY ABOUT HIMSELF BEING TRADED TO THE UN-EMPLOYED LEAGUE...
THIS IS THE THIRD TIME BIGDOME LOOKED OUT...AND CUBEB IS ALWAYS READIN' THE SPORTS PAGE!
WHAT'S HE BAWLIN' ABOUT? HE NEVER BOUGHT A TICKET TO A BALL GAME IN HIS LIFE...AND THAT'S MY PAPER HE'S DROOLING ON!!
WAILING WITH THE CHIEF MOURNER FOR THE LOCAL TEAM'S LATEST DIDOS.....
THANX AND A HAT TIP TO "HAP AND JER" DETROIT A.C., DETROIT, MICH.
7-6
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Changing Times for Commercial Refrigeration Boost Business Prospects for Dealers

MEN WHO SELL commercial refrigeration equipment nowadays are concerned because they feel cornered. Here's why:

Supermarketing, as such, apparently is running on a treadmill. Supermarkets today don't seem to have any new worlds to conquer, nor is their further expansion augured at rates comparable to those of the exciting last dozen years.

"Mom and Pop" stores STILL fill in the chinks between the "supers" by offering close-in neighborhood location, plus such special services as credit and delivery (and staying open nights and Sundays!).

Trading areas have shrunk, too. Potential number of people served by each supermarket has dropped from 13,000 to 7,500 in the last few years. Therefore, national food-store chains have cut back their ratio of new store building.

Narrowing of supermarket operating margins—and slagging year-to-year sales growth—can be attributed to overexpansion in certain areas, plus the continually rising overhead costs which plague all big corporations.

These rising operating costs not only have pinched profit margins, but are dwarfing the growth of supermarketing *per se*. Obviously fundamental economics (the Law of Diminishing Returns) is rearing its hydrahead in this arena.

"Suburbia" (a phenomenon which arrived "big" in the 1950's) presented interesting growth conditions for supermarkets. It made shopping by auto sensible, and outmoded the horse-and-buggy delivery system which marked the heyday of charge-account "corner groceries."

Subsequently the latter, along with independent food wholesalers, banded together for mutual survival. These counter-movements took two forms: retailer-owned cooperatives, and wholesaler-sponsored voluntary groups of small food dealers.

Such loosely-formed associations thus became quasi-chains, in effect. And they've slowed down the burgeoning of nation-wide supermarket systems, which are controlled by enormous corporations.

Almost everyone in the commercial refrigeration industry agrees that natural limitations of supermarket expansion finally have appeared. But few will admit that these limits are immovable. For example:

When does a supermarket veer toward the functions of a department store? Here are some of the new forms which supermarketing is taking:

Gourmet vending—installing new multi-deck open freezers which can display exotic food lines to capitalize on the "floor traffic" generated by casual (father on the loose!) shoppers.

Humanized supermarketing—attempting to re-win business from organized independents by focussing the attentions of "chained" clerks and managers on individual customers, so as to win "repeat" business.

Automation—improving efficiency and profit margins by simplifying and mechanizing clerkship—especially those exasperating checkout counters.

Cautious forays into sales of gourmet items may turn supermarket retailing around full-cycle—back to the "crossroads general store" concept.

Moreover, this angle of the potential supermarket "revolution" is a return to the "human touch" of those wonderfully *personal* family stores which middle-age folk remember nostalgically.

With their revival consumers again would enjoy especially appreciated personal services. Renewal of charge-account business, for example, and bicycle deliveries by high school boys.

What does all this reverse-cycle speculation as to the future of chain-food-stores mean to the commercial refrigeration business? Simply this: a larger slice of the pie for home-town dealers in commercial refrigeration products.

Whether through greater autonomy on the part of national supermarket unit managers, or a new "lease on life" for independent grocers, favorable omens point toward a resurgence of business for local commercial refrigeration agents.

The era of factory-direct sales to ever-growing national supermarket chains is dimming. Commercial refrigeration manufacturers are in no sweat, however.

In-the-saddle *local* chainstore buyers, plus blooming independent grocers, will take up the "slack."

Everybody has to eat, of course, and there are more of us eating more groceries every year.

From the Files of the News

25 years ago . . .

Following the explosion of a compressor that was to have been part of an air conditioning system for a restaurant, which resulted in fatal injuries to two workmen, Chicago authorities have come to the conclusion that all installers of refrigeration and air conditioning systems should be thoroughly examined before licensing. . . . Home-owners, merchants and manufacturers are being given a first-hand view of the practical advantages of air conditioning at the first annual Air Conditioning Exposition sponsored by the Cincinnati Electrical Association.

Improvement in the health and efficiency of employes is sufficient to justify economically the installation of air conditioning in almost every type of business, concludes a survey of the progress of air conditioning completed by the Philadelphia Electric Co. Among those attesting to marked improvements in the health and efficiency of their employes because of air conditioning were executives of Northern Trust Co. of Chicago, Metropolitan Insurance Co., and the Chicago Title and Trust Co. The survey also showed that the cost of owning and operating air conditioning in large buildings is somewhat less than 15 cents per sq. ft.

Complete year-round General Electric air conditioning will be the principal selling feature of 48 moderatly priced homes under construction by Washington Builders, Inc. in the nation's capital. . . . "Profits from air conditioning will be two-fold: from prevention of deterioration of stock and from increase in patronage. Store personnel also enjoys comfort and health without additional cost." So stated Mrs. Ora Snyder, famed Chicago candy-maker, in announcing plans to complete air conditioning of all of her retail stores. . . . New storage refrigerator in Chicago flower shop maintains 48-55° F. temperature and 80% relative humidity.

10 years ago . . .

A line of 2-hp. residential air conditioners, designed for use with any forced warm air heating system, and priced to provide a 5-room home with complete summer air conditioning for less than $1,000, was introduced by York Corp. . . . "Prescription for Profits with Air Conditioners," a guest editorial by W. H. Eichelberger of Philco Corp., recommended adequate stocking of room air conditioners by dealers to assure pushing room air conditioners sales past the record 100,000 units sold in 1949.

How the proposed Truman program of controls on the U. S. economy in order to ready the nation to meet its responsibilities to the United Nations were described. . . . Refrigerated packaging near farm shipping point can help sale of perishables, stated a U. S. Dept. of Agriculture official. . . . By pooling their efforts in a restaurant equipment show, Allentown, Pa. commercial refrigerator dealers drew big crowds and sold $10,000 worth of equipment from the floor.

A counter-type Nashville, Tenn. restaurant reported summer-time volume up four times following installation of a 5-ton air conditioner. . . . The Sheraton hotel in St. Louis, installing a 100-ton Westinghouse chilled water system for guest rooms, plans to get back a part of the cost by charging an extra 50 cents for air conditioned rooms. . . . Pet stores are good prospects for the sale of small refrigerated display cases, say James Scatena of Scatena York Co., San Francisco.

A "white elephant sale" cleared out an accumulation of discontinued merchandise in the stock of Tesco Distributors, Newark supplies wholesaler. . . . Factors in selecting air diffusers were outlined by F. Honerkamp, Anemostat Corp. engineer.

IT'S A SAD SITUATION

Bader's Sales & Service, Inc.
Highland Park, N. J.

Editor:

It isn't often that I fall out with your editorials, but I must on the editorial in your June 27, 1960 issue, headed, "Commercial Refrigeration Dealers Have Become Servicing Contractors."

It's a sad situation when a supermarket wants the local dealer to do its engineering work, so that the chain can save this cost.

Of course, they do not expect to pay you for this engineering, but they will go to several dealers. Each dealer has the same cost of engineering, and the supermarket chain will take the lowest quote in most cases.

Instead of the installing dealer objecting to this, they still break their necks quoting on the installations, for ridiculous low prices, and gambling on labor costs which are uncertain.

F. BADER

9 YEARS OUT OF THE INDUSTRY— STILL SUBSCRIBES

Wisconsin Concrete
Products Association
Milwaukee, Wis.

Editor:

It's been a few years since I've had the occasion to write to you. Although I've been out of your industry for about nine years, I still receive your paper with great interest and am still and active member of the RSES and ASHRAE.

I wish to compliment you on your editorial in the June 20 issue "Pertinent Potencies for Consulting Engineers, Contractors, etc."

I would like to have your permission to reprint this article and send it out to members of the Wisconsin Concrete Products Association. Membership in this organization is composed of people who manufacture concrete block and other allied lines of concrete products relative to the building field.

FELIX WIERMAN

'GREAT DAY COMING' SEEN AS PROPHETIC

The Tappan Co.
Mansfield, Ohio

Editor:

My sincere thanks for the copy of your fine book, "Great Day Coming!"

When Joe Oberc read excerpts from it during a recent visit to Detroit, I was most impressed with what I heard. I was more impressed when I learned that the book had been written in 1944. It's uncanny how true were your predictions.

Thanks again for your thoughfulness. Please let me known if I can ever do anything for you.

D. L. SHELLEY

AGREES IT IS TIME FOR HERMETIC FIELD SERVICE

Sealed Unit Parts Co.
1178 E. 180th St.
New York 60, N. Y.

Editor:

The article "Time to Start Repairing Hermetics in Field—Airtemp Engineer Says" published in the June 27 issue of the NEWS was honest, well written, and something that should have been told to the industry.

We are proud to be part of an industry that has ideas and thoughts expressed in a publication such as yours.

We would like to show this to some people as an educational project. May we have your permission to use this article in the form of a reproduction.

SIDNEY WEINER

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

BOLING RECOMMENDS EDITORIAL CRUSADE ON SCHOOL COOLING

Dunham-Bush, Inc.
West Hardford, Conn.

Editor:

I think your idea of promoting air conditioning in classrooms is a very good one, and I have felt so for a long time; in fact, I have covered this point in many of my talks.

I believe that an editorial crusade by you on this subject would be a great help, and I strongly recommend it.

CECIL BOLING

NEMA Reports Sales of Refrigerators, Freezers

NEW YORK CITY — Total industry sales of electric household refrigerators and farm and home freezers in May and the first five months of 1960 were below corresponding periods of last year, according to a statistical report issued by the National Electrical Manufacturers Association.

Refrigerator sales in May were estimated at 268,000, against 308,200 in the same month last year. Sales in the January-May period totaled 1,469,200, down from the 1,505,300 sold in the like year-ago period.

May freezer sales dipped to 99,200 from 121,700 in May, 1959. This brought sales for the first five months of 1960 to 467,800, down from 525,400 in the corresponding period of 1959.

WATER COOLER

10 GALLON PRESSURE TYPE

$139.50*

*To DEALERS ONLY

- STURDY • ECONOMICAL
- STAINLESS STEEL DRAIN TOP
- NICKEL FINISHED COPPER COOLING TANK
- ½ H.P. TECUMSEH HERMETIC UNIT
- PRE-COOLER
- 5-YEAR WARRANTY ON REFRIGERATION CYCLE

REMCOR Model CW-10A

Also 5 gallon Bottle Water Cooler—$89.50

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manufacturers of water coolers since 1940

GET THE McQuay THERMEX® HOT GAS DEFROST SYSTEM for LOW COST and TOP PERFORMANCE

WANT low initial and operating costs? Want top performance? Then, you want the McQuay Thermex® System. It is the simplest, yet the most efficient hot gas defrosting system available at any price.

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Fully automatic, the McQuay Thermex® Hot Gas Defrost System can be adjusted for any number of defrost cycles to meet any requirement. It is available in eight sizes and a wide range of capacities from 3,000 to 32,000 Btu/hr at 10° T. D.

Remember, when you use McQuay, you use the finest. Years of experience and research provide the know-how for which McQuay is famous.

See your McQuay wholesaler, or write McQuay, Inc., 1607 Broadway Street N. E., Minneapolis 13, Minnesota for complete information.

McQuay means Quality

McQuay INC.
AIR CONDITIONING • HEATING • REFRIGERATION

Described by Mechanical Engineer

Techniques, Instruments for Balancing High, Low Velocity Air Distribution In Big Buildings

Part 2

This continues a discussion of balancing techniques by Sidney A. Littmann, chief mechanical engineer for Giffels & Rossetti, architect and engineer in Detroit.

If the ratio of actual to designed delivery exceeds 100% after the outlet adjustment is finished, fan speed may be reduced to suit.

Similarly, the fan speed may be increased if this ratio remained less than 100%. However, care must be taken, in increasing fan speed, not to overload the motor.

Checking motor input, static pressure across the fan, and fan r.p.m. at this stage of the operation will provide significant information as to accuracy of measurements made of outlet deliveries, and will show up any major resistances in the system.

A substantial difference between fan delivery as found on the manufacturer's multi-rating tables, and measured outlet deliveries would indicate that correction of the latter measurements are warranted.

Fan Static Pressure

To measure fan static pressure, an inclined manometer or draft gauge should be used. The instrument must be properly leveled, and correct fluid must be used to conform with the specific gravity for which the instrument is calibrated.

In selecting points for pressure sensing, care must be taken to avoid locations which are subject to impact pressures.

Fan Speed

Fan speed should be read with a revolution counter over a timed period. Some instruments are made which automatically time the period of engagement of the counting mechanism; with others, the operation is timed with a stop watch.

A glance at any multi-rating table will show that this reading must be quite accurate. A slight difference in fan speed makes a substantial difference in the rated delivery.

Use of tachometers which may be off by one or two per cent is therefore not recommended.

Outlet Air Flow

Ordinarily, air flow at outlets is measured by determining velocity at the outlet, and multiplying by the area, to find c.f.m. Instruments for this purpose are:

Vane anemometer. Use of this instrument is limited to measurement of flows normal to the face of grilles or registers larger than diameter of the anemometer.

Within this limitation, certain other precautions are necessary. The instrument should be calibrated, and should be used only within its proper range.

Damage to the instrument can result from using it for velocities in excess of those for which it was designed, and inaccurate readings will be obtained below the range of calibration.

When applied to inlet openings, a correction factor must be applied, depending upon the characteristics of the instrument.

In the even velocity across the face of the register is not uniform, the vane anemometer will read the highest velocity passing over its blades, which may result in an erroneous reading.

For larger registers or grilles, it is necessary to run a traverse, dividing the face into equal areas of about twice the dimension of the anemometer, and measuring the velocity at each.

Readings Are Then Averaged

These readings are then averaged to determine the velocity which is to be multiplied by the face area to give flow.

Velometer. This instrument reads directly in feet per minute, and is available with a number of probes. It should be used as recommended by the manufacturer.

The velometer is especially useful for measuring tangential velocity at the tip of inner diffusing plates of ceiling diffusers.

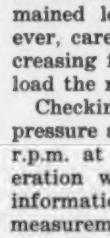
Manufacturers Provide Multipliers

For this purpose, a number of diffuser manufacturers provide multipliers for each size diffuser which, when applied to the velometer reading, will give the air flow through the diffuser in c.f.m.

For accuracy, several readings should be taken around the perimeter of the diffuser, and their average used.

A probe is available for the velometer, by means of which duct velocities may be measured. This necessitates cutting a 1-in. hole in the duct, and requires a traverse similar to that used with Pitot tube.

In view of these factors, measurement of duct velocity in this manner is recommended



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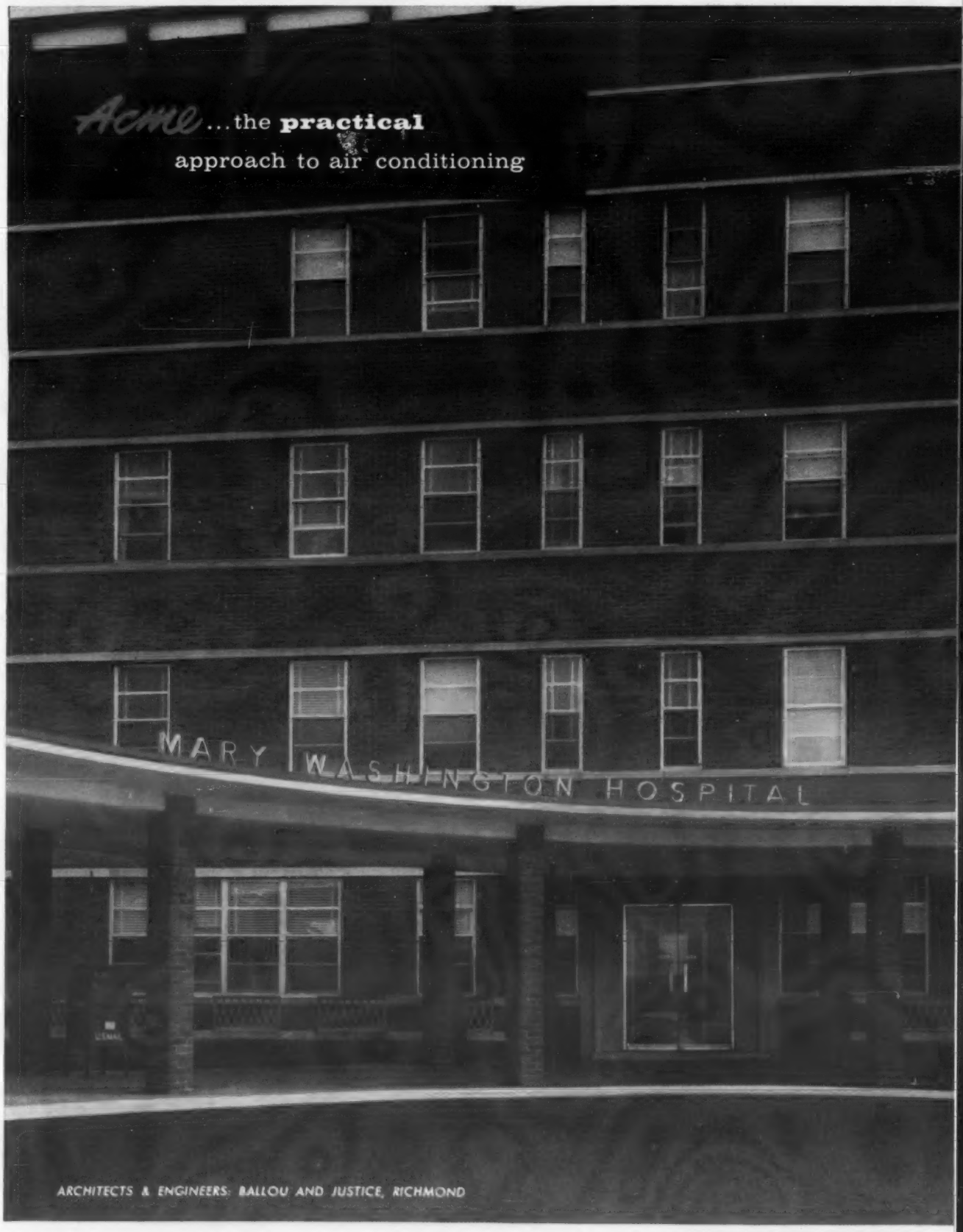
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ARCHITECTS & ENGINEERS: BALLOU AND JUSTICE, RICHMOND

ere measurement of out-
ery is, for some reason,
ticable.

tube and manometer. nbination is the most of flow measurement de-nd is quite useful for y work, or for calibra-the other instruments l herein.

er, its use requires able field work not as-with the other instru-nd it is not ordinarily balancing procedures.

re anemometer. This os the most versatile of which may be used for pose. It is capable of g temperatures, static and several ranges of It will not be damaged at the wrong range of

ffusers it may be used same manner as the r, or the probe may be inserted in the neck of the diffuser and the neck area used instead of the multiplier referred to above.

The hot-wire anemometer is not highly directional in its response, however. If used with single or double deflection grilles it requires correction by the cosine of the angle of deflection.

It is very rapid in its response. A number of readings are required if a suitable average velocity is to be obtained.

The hot-wire anemometer may also be used for measuring duct velocity, in the same manner as with the velometer or Pitot tube.

If it becomes necessary to determine the diameter of a circular duct, a flexible tape reading in centimeters will be useful. Diameter in inches = circumference in cm., divided by 8.

In Newark, N. J.

30-Yr.-Old Post Office To Get 'Almost Invisible' Year-Round Air Conditioning

NEWARK, N. J.—Joseph A. Rosenthal, president of Engineers, Inc. here, announced that Newark's 30-year-old Post Office and Federal building is due for some changes that will modernize and up-grade the quality of the structure.

The project, now in its final design stage, is a complete air conditioning installation to cost approximately $1¾ million. The significant fact about this new system is that it will be almost invisibly installed without major—and costly—structural changes, according to the announcement.

Engineers, Inc., which has provided the engineering and design of air conditioning installations of many major structures, is scheduled to complete the final air conditioning design in July 1960.

This firm previously completed the engineering and design for the improved lighting of this stone and masonry building of approximately 500,000 sq. ft. The building is occupied by the Post Office, Federal Courts, Federal Bureau of Investigation, and other Governmental agencies.

Rosenthal said the installation will consist of a high-velocity distribution system using 6 and 8-in. ducts and installing air handling units in existing attic spaces. The 1,100-ton capacity compressors are installed iin the basement and the cooling tower on the roof of the third story, at the rear of the building, in a location which is concealed by existing walls.

Engineers, Inc. has arranged the new system to permit year-round heating, ventilating, and air conditioning and provides for simultaneous heating and cooling in different zones. Controls for the entire system are located in the basement for ease of operation and maintenance.

American Baptist Convention's New Headquarters To Be Cool

PHILADELPHIA—A central heating and refrigeration plant will be a feature of the American Baptist Convention's national headquarters to be located on a site of about 55 acres on County Line Rd. and Route 23, Valley Forge, Pa.

To be built by Turner Construction Co., the project will include a headquarters office building, a graphic arts building, and a cafeteria-conference center. All buildings will be connected by enclosed passages. Vincent G. Kling is the architect.

The headquarters office building will be a three-story circular structure, air conditioned throughout.

The graphic arts building will be a one-story structure with some mezzanine space in the form of an arc uniquely following the radial lines of the office building, according to Turner Construction. One half of the building will be devoted to a publication plant, while the other half will house the central heating and refrigeration plant and other departments. The cafeteria-conference center also will be air conditioned.

Largest Motel Assn. Says All Units To Be Cooled by Oct. 23

MIAMI BEACH, Fla.—Every one of the more than 24,000 units in the non-profit motel association, Quality Courts United, Inc., will have refrigerated air conditioning by Oct. 23, according to Tommy Tucker, Quality's president.

"Air conditioning goes a long way toward making the guest feel comfortable in a motel," Tucker said. "In today's intensely competitive business, air conditioning is almost as essential in a unit as a bed."

The only way a member motel can continue in good standing in the association without air conditioning in every unit is through an exemption by the board of directors, it was pointed out.

With more than 500 members in all states east of the Mississippi and eastern Canada, Quality Courts claims to the largest association of its kind in the country.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

For a growing hospital...
comfort conditioning
by Acme

Mary Washington Hospital, Fredericksburg, started back in 1899 in a five-room frame cottage. Today, after 61 years of progress and steady growth, the Hospital boasts 150 beds, a 20-bassinet nursery and completely modern facilities throughout . . . including Acme-system comfort conditioning for the recently added third and fourth floor nursing units.

The patients, of course, are the primary beneficiaries of the year 'round comfort that Acme air conditioning provides but they're not alone in their appreciation, for John T. Ellington, Fredericksburg contractor who installed the system, had this to say . . . "When I take on a job, I prefer to buy from one manufacturer, if the equipment meets specifications. I selected Acme because their equipment not only met specifications, but was available for fast delivery so we could meet our deadline. Further, there were no installation problems with the Acme chiller, cooling tower or multi-zone air handler. These units are factory assembled and pre-tested . . . no need to assemble on the job. I just put them in the building and hooked them up."

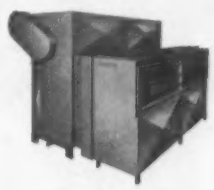
Mr. Ellington stated, too, that "this June will complete two years of continuous operation and there hasn't been a service call involving the Acme equipment."

How can you beat it? . . . simple, low-cost installation . . . factory-tested performance reliability . . . minimum maintenance . . . client-pleasing operation. And all of this mind you, assured by a name that has stood for quality air conditioning and refrigeration equipment since 1919 . . . ACME.

Acme INDUSTRIES, INC.
JACKSON, MICHIGAN
Manufacturers of Quality Air Conditioning and Refrigeration Equipment Since 1919

Packaged Chillers
1½-250 tons

Cooling Towers
3-120 tons


Air Handlers
665-47,000 cfm

Offers Safety Switch for Plenum Access Doors

● A safety switch, for use on access doors leading to plenums in air conditioning systems or other chambers where there is a possibility of shock hazard to service personnel, has been developed by CRS Industries, Inc., Dept. AHRN, 1405 Locust St., Philadelphia 2.

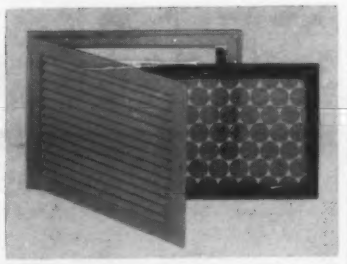
One new safety feature "is that before the access door can be opened a wing nut must be manually unscrewed," the company said. "This unlocking operation immediately interrupts the primary power from the generator thus preventing a resumption of power should the door blow closed after a man has entered the chamber.

"The second safety feature is that the switch cannot be locked ON with the access door open, thus requiring a second man at the switch if high voltage equipment is to be checked.

"The safety switch, which bears UL and CSA labels, known as model S911, allows for full flexibility of location and position on either left or right hand door openings, and has SPST normally open contacts rated at 15 amps, 125 volts a.c.

"The switch assembly was originally designed for use with the Statronic Dirt and Dust Control System but can be used wherever increased safety from shock hazard is required."

More details on the products described on these pages may be obtained by writing the manufacturer at the address given in each story.



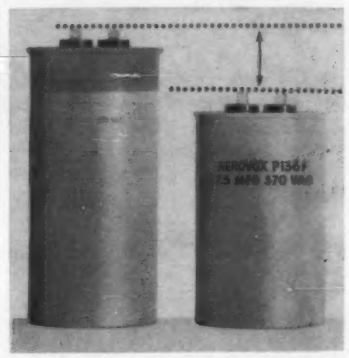
New Filter Frame Has Hinged Grille

● Development of new "Air-Mate" return air filter frames with hinged grilles has been announced by Dry Mfg. Co., Inc., P.O. Box 797, Winters, Texas.

The frames are designed for room use on central air conditioning units in new or existing homes.

Air-Mate filter frames are available in standard sizes from 10 in. by 10 in. to 36 in. by 36 in. (sizes using Air-Mate No. 170 or No. 280 return air grilles.)

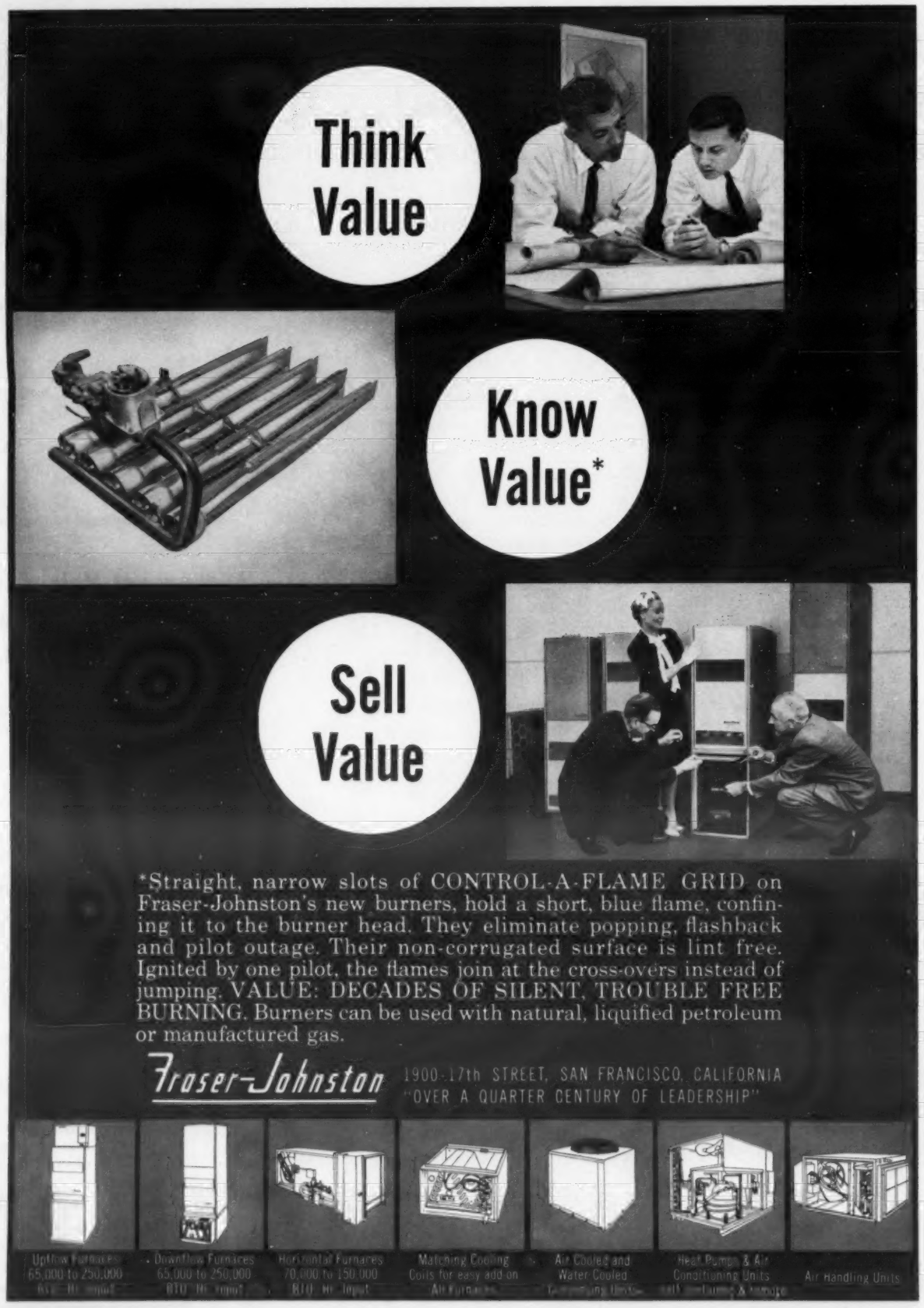
Aerovox Capacitors Feature Reduced Height



● A new line of a.c. motor-run capacitors claimed to offer a height reduction of almost 15% over conventional type units has been released recently by Aerovox Corp., Dept., AH&RN, New Bedford, Mass.

This reduction in can height has been achieved without any sacrifice of electrical performance or life characteristics, according to the company. The new units were developed by Aerovox to meet the specific demands of the motor and appliance industries for space-saving components to enable designers to reduce chassis heights, it was pointed out.

Units are currently available in production quantities in voltage ratings of 236, 370, 440, and 660 v.a.c. in a wide range of capacitances. Furnished in drawn metal cases with double-lock seams, they are hermetically sealed for continuous duty operations. All capacitors are supplied with double-blade universal terminals and new, one-piece dual-cup bushings to meet all UL creepage requirements, the company pointed out.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Know Value*
Sell Value
*Straight, narrow slots of CONTROL-A-FLAME GRID on Fraser-Johnston's new burners, hold a short, blue flame, confining it to the burner head. They eliminate popping, flashback and pilot outage. Their non-corrugated surface is lint free. Ignited by one pilot, the flames join at the cross-overs instead of jumping. VALUE: DECADES OF SILENT, TROUBLE FREE BURNING. Burners can be used with natural, liquified petroleum or manufactured gas.
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Uptlow Furnaces 65,000 to 250,000
Downflow Furnaces 65,000 to 250,000 BTU
Horizontal Furnaces 70,000 to 150,000 BTU
Matching Cooling Coils for easy add-on
Air Cooled and Water Cooled
Heat Pumps & Air Conditioning Units
Air Handling Units

Bows Electric Heat Room Thermostat

● A slim, compact T-77 line voltage electric heat room thermostat is being marketed by General Controls Co., Dept. AH&RN, 801 Allen Ave., Glendale 1, Calif.

The T-77 is the latest addition to the firm's "Decor" line of thermostats. It can be painted to match or contrast with interior wall color or furnishings, or its natural brushed brass finish can be left untouched.

Other features include an extra large heat-sensitive area, electric contacts made of noble metal, and simplicity of the entire mechanism, the company indicated.

"The T-77 design does not require the transfer of temperature from the sensing surface to a liquid fill and then to switching action," it was stated. "Therefore, exceptionally close temperature control can be maintained."

Boiler Safety Device Introduced by Raypak

● To give both mechanical and electrical high-limit protection on heating boilers and commercial boiler installations, Raypak Co., Dept. AH&RN, of El Monte, Calif., has introduced a new boiler safety control device.

Called a "secondary electrical manual reset high limit control," the Raypak HL-250 is hooked in series with a special 250 millivolt safety pilot circuit. The combining of both the standard mechanical modulating high-limit and the new Raypak electrical-manual high-limit control gives "vastly increased protection" to boilers, Raypak engineers say. The Raypak secondary unit is fixed at a setting of 250° F.

If the HL-250 unit is operated through overheating, the safety pilot control button must be energized in order to fire the boiler again.

The new safety unit will be installed on all new Raypak heating boilers and commercial water heaters and will be available separately to contractors for installation on existing equipment requiring the extra safety margin.

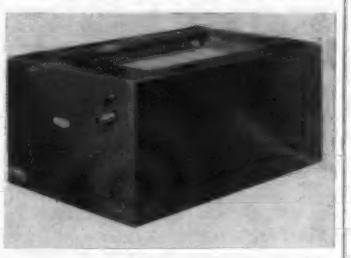
Century Engineering Adds Central Package

● An addition to its line of central year-round air conditioning packages has been announced by Century Engineering Corp., Dept. AH&RN, 221 Fourth Ave., S. E., Cedar Rapids, Iowa.

The AK package consists of a 40,000 B.t.u.h. input gas furnace—either upflow or counterflow—and a 1-hp. pre-charged remote cooling system. The package is suitable for use in apartments, row houses, small homes, recreation rooms, multiple zone installations, and many other applications, the company said.

"The Century line now consists of 74 year-round packages, designed to meet every requirement of the builder," it was stated. "Included in these packages are furnaces of all types.

"Gas furnaces included have capacities of 40,000, 80,000, 100,000, and 120,000 B.t.u. input. Oil furnaces have capacities of 85,000 and 100,000 B.t.u. bonnet output. The remote pre-charged cooling equipment is available in capacities of 1, 1¾, 2, 2½, and 3 hp."



Lennox Offers 3-Ton Down-Flow Cooling Coil

● Production of a nominal 3-ton down-flow cooling coil, supplementing the 2-ton model previously offered, has been announced by Lennox Industries, Inc., Dept. AH&RN, 200 S. 12th Ave., Marshalltown, Iowa.

"For 'add-on' applications under a down-flow furnace, the unit is provided with a cabinet sturdy enough to support the appropriate furnace with which it would operate," the company said. "Like its 2-ton predecessor, complete insulation is installed to prevent 'sweating' and to reduce air noise."

"Coil fins have a rippled edge, for strength and are flat-bonded to seamless copper tubes for maximum contact area. Low resistance to air travel is prominent.

MORT CLARK'S **GALV-WELD** ALLOY ORIGINAL & GENUINE

Solves corrosion problems in outdoor cooling towers, ductwork, etc. Dominate your market by selling trouble-free, all-galvanized structures with Galv-Welded joints. Write for details. Free sample.

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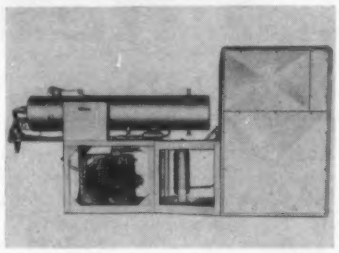
Crane Adds More Packaged Liquid Chillers



● Newest additions to its line of packaged liquid chillers are 8, 10, 15, 20, 25, and 30-ton units, according to Crane Co., Dept. AH&RN, 836 South Michigan Ave., Chicago 5.

"Equipped for operation with three types of condensers—water cooled, evaporative, and air cooled—these new Crane products are designed for use in any type of chilled liquid systems," it was stated.

"Each unit is factory engineered, assembled, and test operated to provide a perfectly balanced refrigeration system. They are easily installed and require only piping and power connections for immediate use."

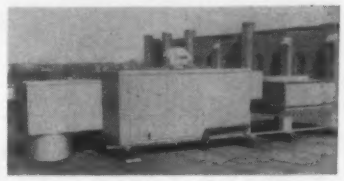
Dispensers Use Stainless Steel Tubing

● Use of stainless steel tubing in all of its new soda fountains, soda units, and drink dispensers was announced by The Bastian-Blessing Co., Dept. AH&RN, 4203 Peterson Ave., Chicago 46.

The company claims that this tubing will last as long as the equipment does.

"The use of durable stainless steel tubing is made practical by the development of a line of sanitary compression fittings," the company said. "The line comprises connectors, tees, elbows, adapters, and couplings—everything needed for installation or repair of the tubing."

Roof-Top Heating, Cooling Packages Offered



● Two new low silhouette combination air-cooled air conditioner and gasfired heater packages for roof mounting have been introduced by Typhoon Air Conditioning Div., Hupp Corp., Dept. AHRN, 505 Carroll St., Brookklyn 15.

Only 43 in. high, the new units have cooling capacities of 8 or 10 tons and heating capacities of 160,000 or 240,000 B.t.u.h. output, the company said.

"Assembled at the factory, the RMU units consist of the heating and cooling system in one package and a separate companion air-cooled condenser," it was explained. "The only field connections required are electricity and gas and coupling the condenser to the main package. The air conditioning system, filters, blowers, controls, and the gas-fired heater are housed together. The air-cooled condenser may be mounted next to the main unit or remotely on the roof. Cooled by a vertical discharge propeller fan, the condenser is unaffected by wind velocity.

"Air supply and return are made through the end of the main unit which may be positioned directly over the space to be cooled or elsewhere with short duct runs to the distribution point. End connections of the air supply and return eliminates duct connections under the unit and permit easy installation of flashing around the ducts."

More details on the products described on these pages may be obtained by writing the manufacturer at the address given in each story.

Less time spent elbow-bending on the job

B.F.GOODRICH INSULATION TUBING CUTS IN HALF LABOR COSTS FOR INSULATING PIPE

IT'S as easy as slicing bread to cut elbows out of BFG insulation tubing—a sharp knife and a miter box are all you need. Parts cement together in seconds. Straight runs go on faster, too. If pipes are already connected, it can be slit, snapped on and cemented in half the time it usually takes for other methods of insulation. Slitting is unnecessary for new lines—it quickly slips on straight or bent pipe as easily as a ring on your finger.

B.F.Goodrich tubing is made of a tough, flexible rubber with millions of uniform, non-connecting cells that seal out air and moisture. It can be used for insulating pipes carrying hot or cold liquids at temperatures ranging from −20°F to 200°F. It's clean, easy to work with—doesn't rub off, chip or crumble. It comes in 6-foot lengths in many wall thicknesses that are easy to handle, easy to store. This BFG insulation is also self-extinguishing, so it can be installed on copper tubing before sweat fittings are made—tubing is merely pushed back and held by clamps while joint is soldered.

Try this labor-saving insulation on your next job. For full information on B.F.Goodrich insulation tubing, call your B.F.Goodrich distributor, or contact *The B.F.Goodrich Company, 180 Derby Place, Shelton, Connecticut.*

INSULATION TUBING BY B.F.Goodrich

What's Going On in Commercial Refrigeration

News of Markets, Products, Methods

Warren Plans 45,000 Sq. Ft. Addition, Ultra Modern Baked Enamel Plant

ATLANTA — In another expansion project, a 45,000-sq. ft. building is being added to the manufacturing floor space of The Warren Co., Inc.

With the continual rise in sales during the last few years, space provided by previous expansions has been used up, the company pointed out.

The new structure is being added to the building that was added in the rear of the plant about four years ago.

"The new building will make possible longer production lines as well as new and wider ones," Warren said. "Finished refrigerators can then be placed in a special storage space for accumulation of truckload shipments.

The addition also will provide a new loading platform accommodating four large trailers for loading simultaneously.

"As soon as we have expanded the manufacturing lines into the new building area," the company added, "we shall then be in a position to install an ultra-modern baked-enamel plant, with sufficient capacity to fill our growing production needs."

Warren also noted that the new straightening machine in its sheet metal department is now in full usage, contributing economy to over-all production.

Charter Higgins & Bone

BATON ROUGE, La. — Higgins & Bone Commercial Refrigeration, Inc., 6157 Evangeline St. here has been granted a state charter to deal in commercial refrigeration. The new corporation listed authorized capital stock of $3,500.

At Average Cost of $5 Million

Sees 150 Automated Ice Cream Super Plants In Operation by 1965

CEDAR RAPIDS, Iowa — By 1965, more than 150 automated ice cream super plants will be operating in the United States, representing an average cost of $5 million each, predicts D. M. Mojonnier, sales vice president for Cherry-Burrell Corp.

He bases his prediction on industry acceptance of Cherry-Burrell's new high capacity continuous freezer and "Load-A-Matic" automatic, electronic mix assembly system.

The high capacity freezer is capable of producing 1,000 gals. of ice cream per hour. The Load-A-Matic weight sensing system will enable new super plants to double productivity over old-style plants.

Howard A. Cherry, Jr., president, announced that $2 million worth of freezers and related equipment has been ordered recently by two large producers and further orders are under negotiation. Cherry-Burrell contracts now include installations in 22 super plants.

"These super plants will centralize production of ice cream in ultra-modern facilities located at points throughout the country," declared Mojonnier.

"Each plant will produce for towns within a 250-mile radius."

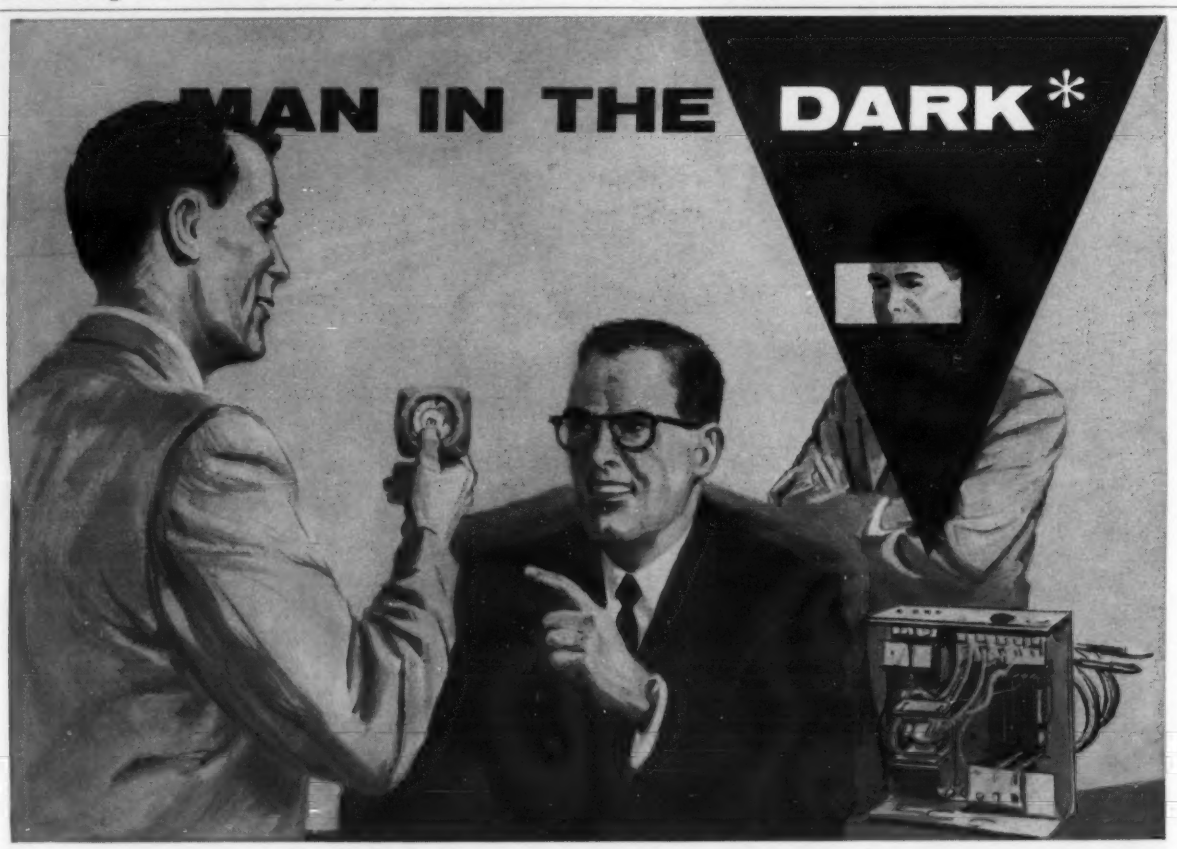
Major producers in the industry are embarked on a five-year program of automation and modernization whose total cost may run as high as $750 million, Cherry indicated.

Cartoon Postcards Used In Scotsman Direct Mail Drive

ALBERT LEA, Minn. — A series of cartoon postcards that point out the selling features of Scotsman ice machines are available from the manufacturer.

"The cards provide a complete direct mail program for distributors and dealers who wish to present information with a light touch on Scotsman units. There are six cards in the set and they will be imprinted upon request."

A sample set of the cards can be obtained from the Scotsman Advertising Dept., Queen Products Div., King-Seeley Corp., Albert Lea, Minn.



"If only I'd known about that a week ago!"

There's no room for second-guessing in the fast-moving world of air conditioning, heating and refrigeration. It takes a man armed with *current* facts to build a brighter future for himself and his company – and yours!

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These are men equipped to act! They're prepared, because the NEWS gives them a week-by-week report on the latest products, manufacturing methods, installation procedures, and vitally important sales and merchandising trends.

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See your local NEWS Representative soon. He'll gladly show you facts and figures that can throw new light on your sales picture.

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LOS ANGELES: .....4710 Crenshaw Blvd., AXminister 2-9501.
DETROIT: .....450 West Fort Street, WOodward 2-0924.

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Salary, expenses, incentive plan and other benefits. Please state age, past experience and include recent photograph.

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Air Conditioning, Heating & Refrigeration News
450 West Fort Street
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Tyler Names South Bend, Ind., Distributor

BAKER-WARD, INC. officials visit Tyler store planning department following the South Bend firm's appointment as distributor for the Tyler Refrigeration Corp. Looking on as Edison B. Ward, president (extreme right), points out improvement in floor layout plan of proposed new supermarket are: (left to right) Donald E. Baker, Jr., vice president; Robert L. Baker, sales manager; Hershel McClelland, manager, service and installation; and Ed Facey, sales engineer. Not pictured is Tom Thompson, Baker-Ward store planning specialist.

NILES, Mich. — Baker-Ward, Inc., South Bend, Ind., has been appointed distributor for the complete line of Tyler commercial food refrigeration equipment, adjustable metal shelving, mechanical checkout counters, and display fixtures, it was announced by Robert L. Tyler, president, Tyler Refrigeration Corp.

The South Bend firm, which specializes in the engineering and design of food markets, restaurants, cafeterias, drive-ins, etc., is headed by Edison B. (Ed) Ward, president.

No newcomer to Tyler, Ward was for 10 years a member of the Niles organization where he served as assistant to the president and dealer sales manager. In 1947 he left Tyler to form Baker-Ward, Inc.

Ward is a vice president and director of the National Commercial Refrigerator Sales Association, and also serves as chairman of the Membership Committee and member of the Joint Relations Committee of that organization.

Located less than seven miles from Tyler's main plant and headquarters, the South Bend distributing firm is housed in a modern 8,600 sq. ft. building which includes a display room, service and parts department, sales and administrative offices, etc.

Nineteen people make up the Baker-Ward organization. They include Ward as president and treasurer; Donald E. Baker, Jr., vice president; Edgar Bruce Ward, secretary; and Robert L. Baker, sales manager.

Other key personnel include a full-time store planning specialist, five sales engineers, and seven service engineers who provide 24-hour maintenance and service of equipment.

In addition to handling sales and service of the complete Tyler line, Baker-Ward will continue to serve as distributor of commercial and residential Typhoon air conditioning units, plus major lines of allied food store and food service equipment, it was pointed out.

"Baker-Ward offers a complete service for the engineering and design of complete new supermarkets or remodeled stores, including the development of the basic merchandising layout," the announcement said. "The firm is also staffed to handle all electrical, plumbing, heating and air conditioning, and parking lot details, working in close cooperation with the architect, contractor, and customer."

Baker-Ward, it was noted, "follows every detail of the job from the initial construction of the building to the final day of grand opening."

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

K. G. BROWN MFG. CO. of Mattituck, Long Island, N. Y., announces the introduction of a new "Junior" model ice vendor. Brown has designed these new units for the smaller operators who have demanded a more conveniently sized vendor. The new "Junior" features a walk-in rear door, ½-hp. compressor, external control housing, and recessed fluorescent lighting. It vends 50 10-lb. bags and will store 100 more, while measuring only 4 by 8 ft. outside. The above shipment represents the first large delivery of these models. They are destined for the H. E. Humphries Co., 180 N. Main St., Concord, N. H., who plans to locate them at various supermarkets and gasoline stations in the area.

Leaves more useful shelf space available in reach-ins, back bars, and under-counter cabinets because it has an *extremely flat, thin silhouette of only 4½".*

OTHER TOP-AIRE FEATURES ARE:

- **Angled fitting so drain can be run through back or bottom of cabinet**
- **Knockouts in top, plus opening in rear, for bringing out connections**
- **Adequate space inside cabinet for expansion valve to be attached . . . out of sight**
- **Life-lubricated, impedance-protected motor**
- **Attractive grained aluminum cabinet.**

Available in three capacities: 1000, 1300 and 1700 BTU/hr at 10° T.D. based on entering air temperatures. For complete information, write for BULLETIN No. 80.

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HALTS CORROSION and SCALE DEPOSITION
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KARLSONITE phosphate water conditioner holds minerals and metallic elements in water in perfect suspension, preventing clogging deposits that reduce efficiency of boilers, heat exchangers, cooling towers, etc.

Water for human consumption, too, is vastly improved. Crystal-clear, tasteless and non-toxic, it produces no deposits or rust stains in ice cubers, coffee urns and other equipment in most cases . . . when conditioned with KARLSONITE.

An easily installed KARLSON dispenser feeds KARLSONITE into the system automatically. With no moving parts, maintenance is nil. Only occasional replacement of the conditioner is required.

With KARLSONITE, it's so easy to get the most and the best out of your water system. The cost? Amazingly low. Why not investigate?

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WATER CONDITIONING COMPOUNDS AND EQUIPMENT

TECH CENTER

by Frank J. Versagi, Technical Editor

(One of a group of discussions on Installation, Operation, and Servicing of Commercial Refrigeration Equipment.)

Air-Cooled Machine Rooms

Not very many years ago, air-cooled refrigeration systems of any size were hard to find.

Today, such installations are numerous and increasing rapidly. So rapidly, that the ASHRAE Guide has had to revise drastically its evaluation of these systems and so rapidly that some manufacturers now report 50% of their condensing units, of all sizes, are air cooled. Among the factors contributing to this surging use of air-cooled equipment are:

1. Water problems — availability, costs, quality;
2. Sewage difficulties — prohibitive rates, limited facilities;
3. Improvements in the performance of air-cooled systems due to new designs, controls, more sound engineering of installations.

In commercial refrigeration, air-cooled condensing may mean either the use of remote condensing or the use of oversize condensers on each compressor in the machine room. Each method has its proponents.

Both procedures, properly installed and controlled, will give satisfactory performance over a wide range of operating conditions, but there are limitations beyond which performance falls off. High ambients, over 100°, cause high head pressure, lower the capacity of the unit, shorten the life of electric motors, reduce the life of the compressor.

High discharge pressures can also be caused by clogged or dirty condensers and by recirculation of the condenser air due to poor location of the condensing unit in the machine room. According to one manufacturer's bulletin, these latter factors "undoubtedly cause more trouble with air-cooled condensing units than do extremely high ambients."

At the other end, low ambients cause problems when the condensing unit is located in an area where the condensing temperature can be lower than that of the commercial fixture. In such instances, the suction pressure will not rise high enough on the off-cycle to actuate the pressure control, necessitating the use of temperature controls on the equipment. The addition of temperature control in most instances represents an added expense, since most equipment designed for remote installation is controlled by a low pressure control.

With low condensing pressures, there is also the related problem of the head pressure being too low for satisfactory performance of the equipment.

As described in the literature, "The capacity of expansion valves is rated at a specified pressure difference across the valve, and normally this figure is 100 p.s.i. If the head pressure should drop to 80 p.s.i., say, and the evaporator of the fixture is operating at 20 p.s.i., there would be only a 60-lb. differential across the valve and the valve could not feed the proper amount of refrigerant to maintain rated capacity. It is desirable to maintain the head pressure at a minimum of 110 p.s.i. on normal temperature equipment and at a minimum of 100 p.s.i. on low temperature equipment."

Stabilizing Effect Of Extreme Ambients

One approach to stabilizing the effect of extreme ambients has been the use of large remote air-cooled condensers with enough condensing surface to insure normal condensing temperatures and pressures under most conditions. Some hold that with the proper size air-cooled condenser the capacity of the refrigeration equipment is the same as use of similarly sized water-cooled units would give.

Manufacturers of remote air-cooled condensers supply control procedures and equipment which maintain proper head pressures under very low ambients, but—in the case of units operated by low pressure controls—the need for adding a temperature control still exists if the ambient is expected to drop below that of the fixtures at any time.

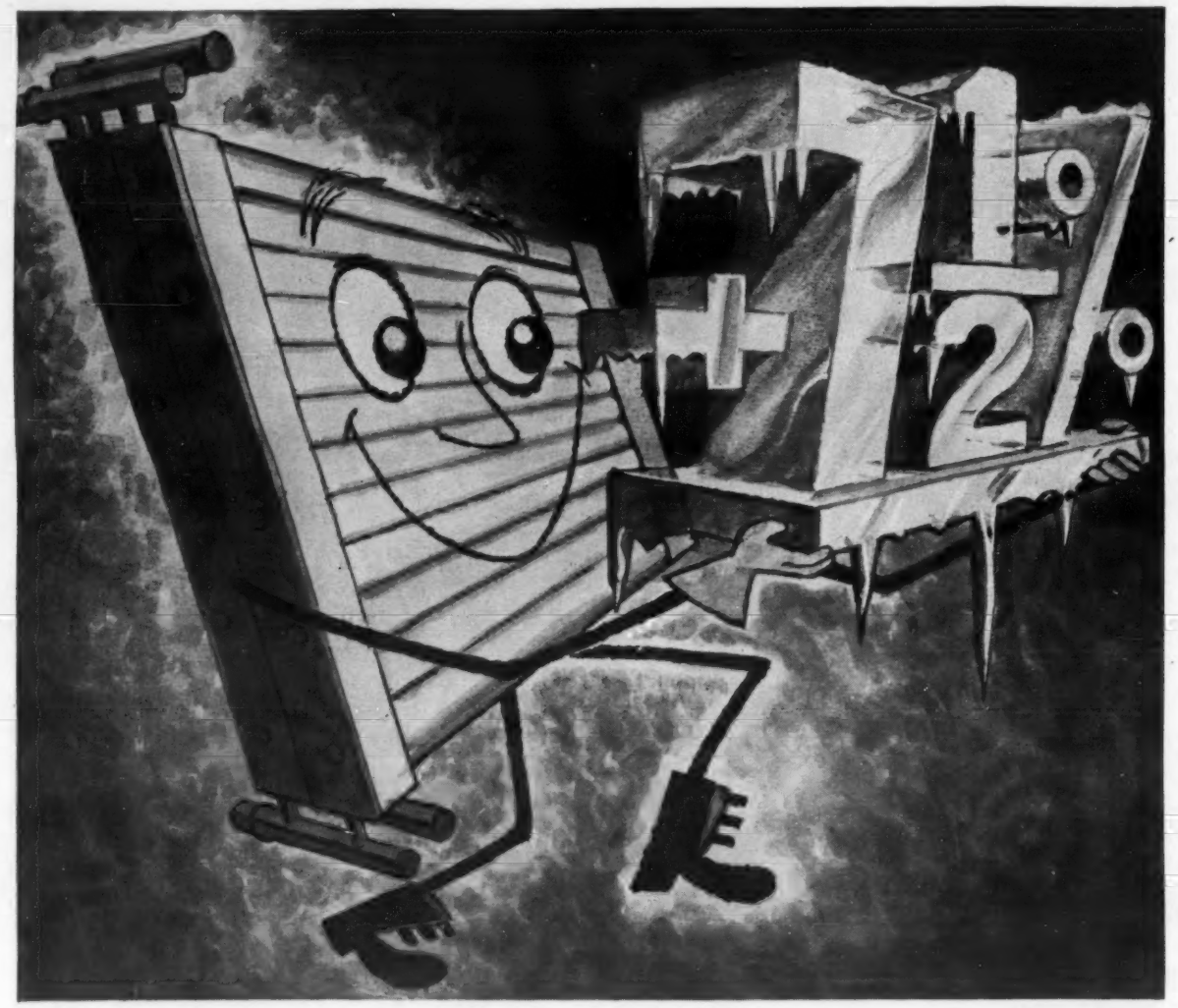
Another problem: where defrost termination is pressure-controlled, a temperature-terminated clock must be used instead of the pressure-terminated one. For this, a temperature control must be installed on each case with the air bulb located in the outlet of the air duct. The temperature controls are wired in series on all cases on one compressor and fed with two wires back to the time clock.

Relative Costs of Air-Cooled and Water-Cooled Units

Users of remote air-cooled systems are generally happy with their equipment. Since there are several times a year that the refrigeration serviceman is needed for one reason or another, they do not consider it a disadvantage that seasonal adjustments are frequently needed for optimum performance.

One medium sized food chain in the Midwest has records to show that their five remote air-cooled installations are each costing less to maintain than any of their 80-plus water-cooled stores. However, their records do not indicate that the savings in dollars will overtake or make up for the increased installation costs within the life expectancy of the equipment. Nevertheless, the chain is considering going to more air-cooled remotes "because there seems to be less interference in our over-all operation than with water cooled."

The second approach to air-cooled refrigeration—the use of oversize condensers for each compressor — is finding increased acceptance. Some claim



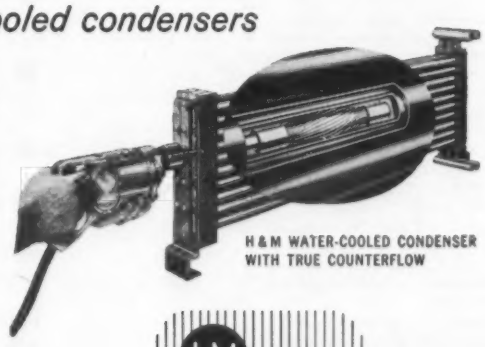
Want a 7½% increase in refrigeration capacity for the same horsepower?

Use Halstead & Mitchell cleanable water-cooled condensers

Test results indicate an average of 15 degrees of subcooling in H&M condensers because of true counterflow of refrigerant and water. Since liquid refrigerant leaves the condenser at a lower temperature, system capacity is increased about ½% for each degree of subcooling—without additional power input.

But that's not all: Halstead & Mitchell Water-Cooled Condensers have easily removable end plates for quick, safe, *mechanical* cleaning of the water passages. Scale and sludge are quickly removed so that condenser efficiency stays high; operating costs, low.

Featuring double-tube design, seamless copper tubing and brass headers, H&M condensers are available in ⅓ to 25-ton capacities. All are U/L approved, and can be used singly or in multiples on racks. Ask your H&M refrigeration wholesaler for complete information, or write Halstead & Mitchell Co., Bessemer Building, Pittsburgh 22, Pa.



H & M WATER-COOLED CONDENSER WITH TRUE COUNTERFLOW

HM Halstead & Mitchell

Air Handlers • Finned Coils • Air-Cooled Condensers • Cooling Towers • Water-Cooled Condensers

advantages for this type installation over remote air cooled, but opinion is not unanimous.

Proponents show that no extra refrigerant charge is needed with oversize package air-cooled condensing units. Maintaining optimum operating conditions at extreme ambients is less of a problem with a properly installed machine room; servicing is less of an over-all problem, they hold.

"High heads in summer, low heads in winter are passing with the increasing use of specially designed machine rooms with motorized louvers and exhaust fans," states one manufacturer.

"Using condensers with 30-50% greater capacity than conventional, well ventilated machine rooms with proper controls for winter and summer operation—under these conditions units have almost the same capacity as water-cooled units during most of the months of the year," according to another producer.

"Air-cooled units are back to stay," and "We are going more and more to air cooled," are typical comments from commercial refrigeration manufacturers.

At least one major national chain is not so sure. While admitting to the NEWS that their air-cooled installations have caused no difficulties, this chain states "Electrical operating costs go way up—easily overtaking any savings in water use and control." A construction engineer for this firm estimates that electrical consumption of a 30-hp. air-cooled installation is equal to that for a 40-hp. water-cooled system.

Another chain, also agreeing that the air-cooled machine rooms perform more than adequately when properly installed, nevertheless complains that "Air-cooled installations of this type must be taken into consideration a year ahead of time. With cooling towers, you can decide the location at the tail end of the construction period."

Some accounts hold that operating and service costs on air-cooled installations are higher than for water cooled—"way out of line, in fact." Without exception, however, where service or operating costs were found excessive, investigation revealed improper installation to one degree or another. This point was verified by the store operators.

This problem of improper installation is a major one for commercial refrigeration manufacturers and is touched upon several times in this series of discussions.

Fundamental to proper operation of the oversize air-cooled units is air supply to the machine room. Theoretically, there is no limit to the number of compressors which can be mounted in a single machine room, but an adequate supply of fresh air to the condensers must be maintained. Most manufacturers agree that a rule-of-thumb air measure would be 1,000 c.f.m. for each horsepower. In maintaining this volume, air velocity through the louvers of the machine room should not exceed 500 f.p.m.

For summer operation, the air entering the condensers is maintained at outside ambients For winter operation, air entering the condensers must not drop below 68-70°.

Specific features to prevent recirculation of air through the condensers, or short circuiting of air from the intake louvers through the exhaust fans are available from the several manufacturers. Here is an area where the installing contractor should definitely hold to manufacturer specifications — "at least until he has much more experience under his belt that he can possibly possess at this state of the art."

file guide: COMMERCIAL: air-cooled

Locker & Freezer Provisioners To Meet Sept. 18-21

CHICAGO—"Hoist All Sales" will be the theme of the 1960 national convention of Locker and Freezer Provisioners to be held Sept. 18-21 in Chicago's Hotel Sherman.

The conclave, which will feature a nautical theme throughout, is sponsored by the National Institute of Locker & Freezer Provisioners. As the convention theme indicates, attention to various aspects of "selling" will dominate the sessions, it was pointed out.

This 21st annual industry meeting is expected to attract approximately 1,200 operators from all over the United States and Canada. Demand for exhibit space at the convention has been running high, the association reported, and additional space has had to be opened to accommodate exhibitors.

A total of 80 booths has been rented to date. Twelve of the firms which have contracted to exhibit are national freezer manufacturing firms.

See Little Change In Supply

Some Canadian Milk Producers To Quit Rather Than Buy 'Expensive' Bulk Coolers

ESSEX, Ont., Can.—About 80 of Essex county's 800 milk producers say they will dispose of their herds rather than install "expensive" bulk milk coolers, the Essex County Milk Producers Association said.

The association said the movement has already started as shippers to Bordens Co. Ltd. begin the installation of the coolers—at from $3,500 up.

Farmers say the move will mean an increasing trend to cash crop farming.

The association said not all the 80 are giving up their herds only because of the expense of bulk milk cooler installations. Some were considering retiring before dairy companies made the move to coolers.

Milk production is not expected to suffer from the change. Installation of the coolers is expected to take about a year.

With bulk milk coolers the old pickup system using large milk cans is eliminated. Farmers pour their milk into the coolers and it is collected by tank truck.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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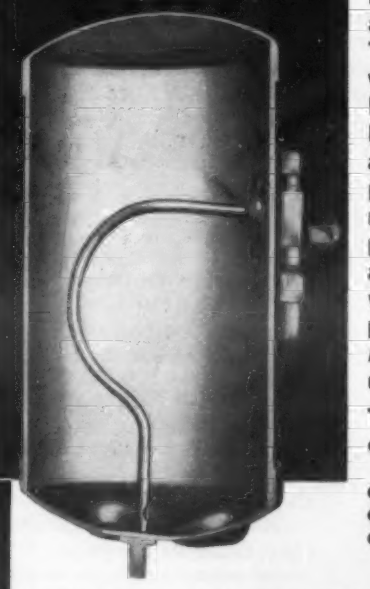

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These two sealers, designed by refrigeration servicemen, are perfect for 1001 different jobs:

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- Sealing latch and hinge plates, tube entries and cabinet bases

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Apartment House Air Conditioning Forum

(2) *Contractor Gives His Experience and Viewpoints on Central Systems for Air Conditioning Apartment Bldgs.*

Factors involved in air conditioning new apartment house buildings include many things in addition to the selection of a specific type of system—the other elements being such things as financing, and "selling" the builder and the architect.

How all of these elements play a role in present-day air conditioning of apartment houses were discussed at one of the "Customers' Forums" arranged by York Div., Borg-Warner Corp. to get some information and first-hand expressions of opinions from those who are major factors in the specifying and purchase of air conditioning.

Principal speakers at the forum were John Pruyn, architect and planning consultant, who concentrated his remarks—published in the first instalment of this report—on through-the-wall applications; and George P. Nachman, president, The Spohn Heating & Ventilating Co., Cleveland, veteran mechanical contractor.

The remaining instalments will report on Nachman's experience and viewpoints on central system apartment house air conditioning, and a report of the question-and-answer part of the forum.

Schurman of York

Our next speaker is George Nachman. He is president of Spohn Heating & Ventilating Co. He is a graduate of Lehigh university, and is the past national president of the Mechanical Contractors Association, and is past national chairman of Mechanical Contractors Association Boiler Output Committee the years 1943 through 1955. He is a member of ASHRAE and a charter member of the Cleveland Air Conditioning Contractors' Association.

We've asked him to speak on apartment houses because the Spohn Heating & Ventilating Co., and George Nachman particularly, has been identified with apartment house work for many years. His work is not restricted to either theaters or apartment houses. He has done the mechanical work on many of the largest shopping centers, office buildings, department stores, virtually any phase of work with which the mechanical contractor has been identified.

George Nachman

My discussion this evening, of course, concerns another phase of the business beside the window unit. The window unit, for many people, is symbolic of air conditioning. You pick up a newspaper and you see the advertisements of the window unit, and magazines and so forth. It just illustrates the terrific power of American advertising.

Lending Agencies, FHA Now Allow for Air Conditioning

One phase of this problem which is most important is the price ceiling. Our competitor in this field is not our competitor down the street but that dollar sign of how much a suite. How much a suite can this job be done for? In that regard, over the past 15 years there has been some educational work accomplished. The first job that we ever did, was a luxury-type apartment and the first mortgage on that building was taken by the Hartford Life Insurance Co. and when the builder proposed to put in some air conditioning, they wouldn't give him one dime more on the mortgage because air conditioning was going to be put in. Since that time, the Hartford Insurance Co. has taken a different attitude.

And when FHA first set up schedules to lend so much a room on apartment house construction they, in turn, would allow nothing additional whether the owner put in air conditioning or whether he didn't. But they have been educated a little so they've overcome that. And that is one of the first jobs we have to do, to promote air conditioning in apartment house construction.

We take it for granted that a restaurant, or shopping center, or theater, or other public buildings are going to be air conditioned. But the air conditioning of apartments is only a recent development and offers a tremenous future for everyone concerned in this business.

5% Vacancy Rate Nearly Eliminated By Air Conditioning

Lending agencies used to think in terms of 5% vacancies. When you set up a renting schedule on it and you set up your total income they immediately insisted you take off 5% for vacancies.

Well, the proof of the pudding is that in air conditioned apartments, you just do not have that 5% vacancies. I can name building after building in Cleveland where we have put in the air conditioning, in which there have been practically no vacancies, only perhaps a loss of a month where one tenant was moving out and another tenant was moving in. That has fortunately begun to change the thinking of some of those lending agencies.

I think that all of the manufacturers could do well to direct some advertising along that line, based on experience, that they can gather from the field. When we first started to do air conditioning in these FHA financed apartments, FHA had absolutely no background whatsoever for setting up such costs. Perhaps we were fortunate, because it happened we were about the only concern that had any experience and they did look toward us to give them some background for setting up the cost factors. Little by little we have established some of these.

I was most gratified when two FHA men recently walked into my office with a project. I don't know where it is going to be built or who is going to build it, because it wasn't anything we were working on. It was a high rise building with some 400 suites in it, and I could see they were floundering around a little. They asked me some leading questions and before we got

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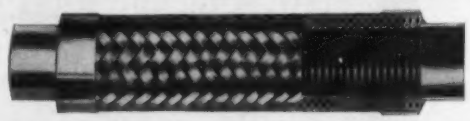
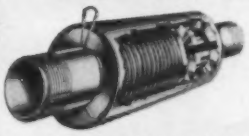
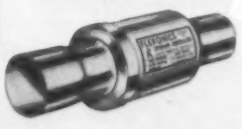


VIBRA-SORBER . . . precision made with uniform wall thickness, balanced corrugations and special braiding. Recognized by Underwriters' Laboratories. Fatigue and corrosion resistant. Standard of industry for major compressor manufacturers. Tube O.D. from ¼" to 8½". Tested, sealed in polyethylene bag and ready for installation.

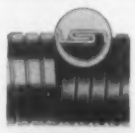


MODEL HS EXPANSION COMPENSATOR . . . the *first* **ALL STAINLESS STEEL** high pressure compensator. Meets all high temperature and corrosion requirements. Heavy duty bellows; screwed, welded or flanged ends. Takes up to 2" stroke, 175 p.s.i.; temperatures 1000°F. Sizes from ¾" to 3".

FLEXIBLE CONNECTORS . . . industry's finest to protect pumps, joints and piping . . . absorb vibrations. Made of pressure-tight hose in bronze and stainless steel, up to 24" I.D.—with complete selection of end-fittings.



MODEL "L" EXPANSION COMPENSATOR . . . first choice of industry for baseboard connector systems. Packless design . . . quick, easy installation and completely maintenance free. Maximum operating pressure 60 p.s.i.; takes up to ¾" stroke; in ¾" thru 2" sizes.



RT-6 (REX TUBE) . . . the superior quality interlocked hose for ventilating and air blower ducting and refrigeration tubing armor. In galvanized steel, bronze, aluminum and stainless steel. ⅜" to 8" I.D.

PULL-OUT UNIT — Special Vibra-Sorber for compressors. Assemblies incorporate SAE female swivel on one end, and male flare on other end. Length from 32" to 50"...¼"-⅝" diameters.

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APPLICATION ENGINEER

Need young graduate engineer who is interested in training to perform Application Engineering for progressive Air Conditioning and Heating Company. Experience in this area of work or in sales engineering desirable but not necessary. Work can lead to Sales Engineering position in field or to permanent Application Engineering position at factory.

BOX A6580, Air Conditioning, Heating & Refrigeration News.

NEW ADJUSTABLE LINE TAP VALVES

For charging, discharging, purging and testing refrigeration and air conditioning systems. Just 2 valves cover 6 sizes of tubes ranging from 3/16" O. D. to 5/8" O. D.

PART NO. AP-1

For 3/16", 1/4", 5/16", 3/8" O. D. tube. The AP-1 adjusts to fit any of the above size tubes.

PART NO. AP-2

For 1/2" and 5/8" O. D. tube. The AP-2 conforms to the tube. An insert which, when used, adapts the valve to 1/2" O. D. tube. The insert is removed when used on 5/8" O. D. tube.

THE ADJUSTABLE LINE TAP VALVES may be installed under pressure and in any position, and incorporates the following features:

- **QUICKLY INSTALLED FROM THE TOP WITH THREE PHILLIPS HEAD SCREWS**
- **ONE PIECE NEEDLE AND SHAFT MAKES IT IMPOSSIBLE FOR NEEDLE TO LOOSEN AND FALL OUT**
- **EASY-TO-GRIP *DELRIN "T" HANDLE CANNOT BREAK OR LOOSEN**
- **ADDITIONAL SEALING CAP FOR MAXIMUM PROTECTION**
- **STREAMLINE FINISH— NO ROUGH EDGES ON WHICH TO SCRAPE YOUR HANDS**
- **CONTOUR MILLED**
- **PACKAGED IN RE-USABLE, HINGED PLASTIC BOX**

*New DuPont wonder plastic

For additional information, see your wholesaler or write to Dept. N-27

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through, with their permission, I made the estimate for them on the whole thing. I made it high enough so if the job does go ahead, the loan will be high enough so that it can go ahead. Educational work of that kind with a lending agency is the first step that has to be taken.

There are many different ways of doing air conditioning in buildings and apartment houses. I am going to talk about only one way of doing it and that is with hot and cold water chilled with two types of units. One, you're familiar with — fan-coil under-the-window units and the second method, a closet type unit, which our company had a hand in developing.

There are only a couple of companies that are making the closet type right now. One company works with us very carefully and I think it has been imitated by at least one other company. We have done upwards of a couple of thousand suites. We haven't done any great big projects with 1,100 suites or anything like that. The largest one we have done is around 250 suites.

Rating Fan Coil Units

Let's get to some of the problems that exist to the contractor's way of thinking in this field. About two years ago the ARI started on a project of trying to set up methods of determining ratings on these fan-coil units and I happened to be in the picture a little bit, not through ARI but through the Mechanical Contractors Association, because we were vitally interested. Eventually a couple of other associations got into the act (Institute of Boiler & Radiator Manufacturers and the Air Conditioning Manufacturers Association).

I don't think many of you here are familiar with the Mechanical Contractors Association recommendations for boilers and boiler burner units and for fin tubing conductors and so forth, but if you should be familiar with it at all you would know that we had taken the lead ever since 1929, which is over 30 years, in determining the net loads and safe loads that can be used in the field for these products. The MCA decided it was absolutely necessary to try to bring a little order out of the chaos that existed in the fan-coil unit, so the job was turned over to the Boiler Output Committee.

Henry Kleinclop of Omaha, who is with Natkin & Co., started in to make an analysis of it. He got it some very valuable information as to what was in the field and what the various ratings were of all the various units that were made and lo and behold they were all over the lot, of course.

We had a couple of meetings on the subject with representatives of these various groups and they prepared a preliminary test code and that test code, as they prepared it, called for testing at one point. We immediately took exception to that.

We said "how can you plot a curve when you are making a test at one point?" Well, they agreed that it was wrong. However, they said that it's the best we can do to get all the manufacturers, and incidentally there were 23 manufacturers in the business who made these fan-coil units at that time.

They had a test set-up with an 8° rise through the coil, and we immediately took exception to that. We said "that's utterly ridiculous—you're shooting the gallons of water up." So they have now come out with the new test code, which I saw for the first time recently. They have set it up for 10°.

I would just like to show you what I am trying to drive at and point out why I think the industry is going in the wrong direction. The formula is very simple —gallons per minute per ton equals 12,000 divided by 500 times the temperature rise through the coil.

If you use 8° through the coil, you circulate 3 g.p.m. per ton. If you use 10°, it's 2½, or 2.4 to be exact. If you use 12°, it's 2 g.p.m.

Fan-Coil Unit Cost Is Only One Small Part

Now what does it mean? The over-all cost of the system is based on any number of different factors. The cost of the fan-coil unit is only one small part. The biggest cost in the system is, of course, the piping, the cost of the labor to put it in, and the cost of the installation, which is no small part.

So, we are trying to urge these particular manufacturers that were present at that meeting to give us a fan-coil unit in which we could get a ton of refrigeration with a 12° rise through the coil, which means 2 g.p.m., which will reduce our pipe sizes, reduce the insulation, reduce the labor, reduce the pumping capacity of the pump, reduce the size of the pump and the horsepower, and thereby give us, the contractor, a chance to bring the cost of the insulation down materially.

I've put some other figures on the blackboard which represent the number of gallons per minute that must circulate through the system, the size of the pipe, and the foot velocity per second of the water through the system, through this particular size pipe.

Now, if we start with a 3 g.p.m. per ton and we have a 300-ton job, you have 900 g.p.m. You can't possibly do anything but go to an 8-in. pipe, because a 6-in. pipe would be much too small.

$$\frac{\text{G.p.m.}}{\text{Ton}} = \frac{12{,}000}{500 \times \text{Temp. Rise}}$$

$$8° = 3 \frac{\text{G.p.m.}}{\text{Ton}}$$

$10° = 2.4$ "

$12° = 2$ "

* * *

G.p.m.	Pipe	Ft. Per Sec.
450	5"	7.5
600	6"	4.7
750	6"	7.2
750	8"	4.6
900	8"	5.8

We try to keep the velocities down somewhere between 5 and 7 f.p.s. on your main runs and it has to be a little less than that in smaller piping, but the whole thing is in proportion.

Now, if we have 2½ g.p.m., then we are in quandary as to which to use, but it would be possible to start off with a 6 in.

(Continued on next page)

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Check the Business Opportunities Section in the classified advertising columns.

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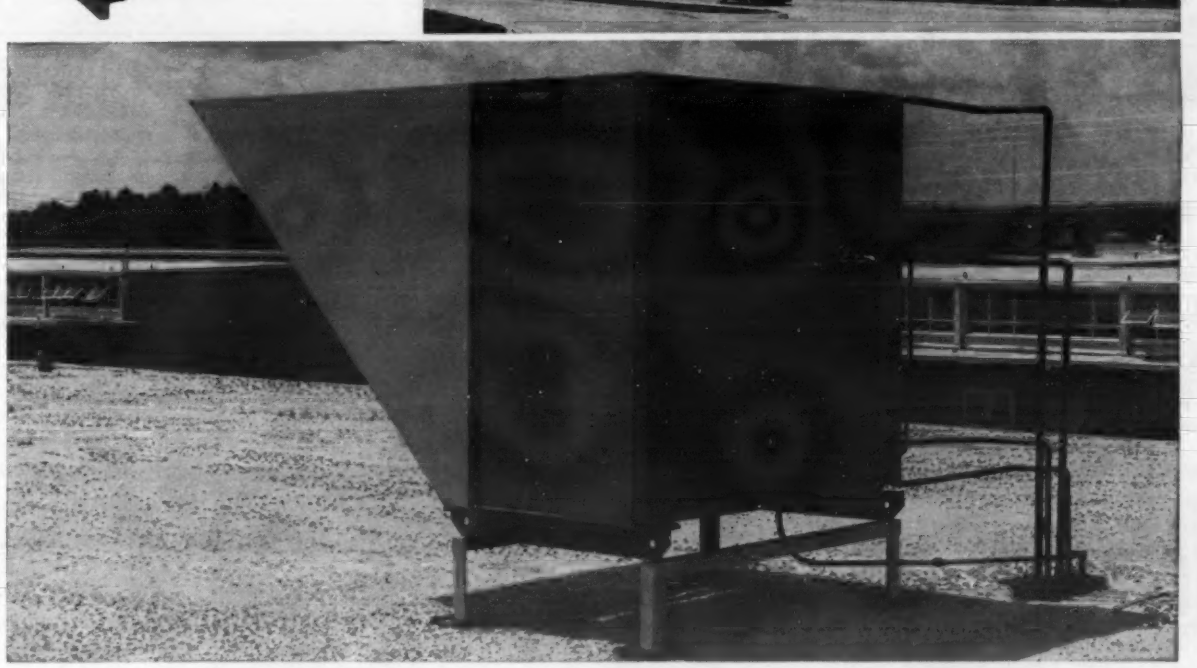

BFC-16 on guard—one of more than 50 Larkin Zephyrcon Air-cooled Condensers at the Georgia State Farmers Market. A full range of both FCs and BFCs are used, many with multiple circuits.

Value-Packed Features

- Direct-drive FC models—for economy and easy maintenance.
- Belt driven BFC models—for larger installations, lowest noise level.
- Patented Larkin cross-fin coil—aluminum fins and staggered copper tubes.
- For use indoors or outdoors.
- A single large fan on BFC model assures low operating noise level.
- Motor on BFC model is standard NEMA design mounted on adjustable base.
- Slow speed motor on FC model is permanently lubricated, has overload protection, and is mounted on resilient base.
- Casing is of heavy-gauge steel.
- Unit finished with baked-on epon-base primer and melamine top coat for maximum protection.
- Motor is enclosed in casing, protected from the weather.
- Discharge shield available.
- Fan guard is standard equipment.
- Return bends protected by heavy-gauge shield.

At the world's largest farmers market the products are protected from the ravages of hot weather with the help of Larkin Zephyrcon Air-Cooled Condensers. More than 50 Zephyrcons provide ample condensing capacity for the big market's refrigeration systems which employ over 200 Larkin high and low temperature humi-temps.

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ATLANTA 1, GEORGIA

Apartment Air Conditioning--

(Continued from preceding page)

in your main run and, of course, if you get the 2 g.p.m., why then you definitely can use the 6-in. pipe and all the other pipe sizes in the building are more or less in proportion.

There is another factor here. If you have a 12° rise or a drop through your chiller instead of 10° or 8°, your chiller sizes are smaller, your machinery is operating at a better point, and you are able to use less horsepower per ton with the 12° through the chiller than if you are down here with the 8°.

I am aware that with absorption units, you can use 10° through there, or even 8°, and perhaps the outfit will work better, and so the equipment and the fan-coil manufacturers as well are going to use absorption systems, so we can go to 3 g.p.m.

Then the next thing, of course, is the competitive situation on the fan-coil units is such that you feel you must not put any more material into the unit itself because of the price situation.

However, I'll say that from the contractor's point of view, you can see that a few dollars extra cost in the unit, if it had the equivalent of a four-row coil in the unit, would enable us to go up to 2 g.p.m. per ton. Our over-all cost of the system would be materially lower, to say nothing of the fact that we have dropped the wet bulb because of the greater depth of the coil or better heat transfer giving us better inside conditions within the space itself.

(To Be Continued)

- Low humidity without reheat
- Economical operation
- Low dew point at any temperature
- Easy installation

Dryomatic provides you with a complete line of automatic, adsorption type air dryers which solve your customers' humidity control problems in candy plants, drug processing, warehouses, laboratories, dry rooms, paper storage, and other locations where extremely low dew points have to be precisely maintained.

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AIR CONDITIONING, HEATING & REFRIGERATION NEWS
450 W. Fort St. Detroit 26, Michigan

Is Deeper Coil the Answer to More Efficient, Less Costly Installation of Fan-Coil Units?

In response to a request from the NEWS, George Nachman has described in more detail the kind of a fan-coil unit design which he believes would prove more desirable for the contractor in apartment house applications. Says Nachman:

"I have attempted to interest the manufacturers in developing and using more efficient coils in fan-coil units, so that 12,000 B.t.u. with 400 c.f.m. can be developed with a circulation of 2 g.p.m. or even less.

"The closet type unit is incidental. It is easier to fit a deeper coil in a closet unit than into an 'under-the-window' unit. The closet unit is a special application. 'Under-the-window' units are in more general use.

"The whole story is very simple. In recent years, manufacturers have been reducing coil depths, thereby requiring up to 3 g.p.m. per ton. This may reduce the cost of the fan-coil unit slightly, but it increases the over-all cost of the job, requiring—

"1. Larger piping.
"2. Correspondingly higher insulation costs.
"3. Correspondingly higher labor costs.
"4. Correspondingly higher chiller costs.
"5. More pumping capacity.
"6. Refrigeration equipment may not be operating at most efficient points.
"7. Deeper coils in fan-coil units will produce conditions in occupied areas that can be far more comfortable than those produced with 'through-the-wall' window units.

"Actually, for apartment house work only two sizes are needed—400 c.f.m. and 200 c.f.m. with 3-speed motors, preferably. With 12-in. rise through the unit, a full ton can be obtained with 2 g.p.m. circulation. A 12° drop through the chiller or absorption machine permits more efficient operation than 10° or 8°."

Bell & Gossett Offers 'Hydronic Home' Booklet

MORTON GROVE, Ill.—Bell & Gossett Co. has published "The Hydronic Home," a 19-page booklet in full color "illustrating how a modern circulated water system for heating and cooling provides both all-weather comfort and a free hand to the decorator."

The booklet includes diagrams of the Bell & Gossett "Hydro-Flo" hydronic system's elementary parts, including some technical data about these parts and their capacities. Copies may be obtained free by writing to Bell & Gossett Co., Morton Grove, Ill.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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Algae, fungi, and other slimes in towers and condensers create an additional handicap for your cooling system, choking off efficient passage of water through strainers, lines and tubes, cutting heat transfer, raising head pressure, and increasing corrosion. Your equipment works twice as hard to do an ineffective job.

ANCO Algaecide removes and prevents further growth of these organisms, restoring your cooling water system to efficient, economical operation. It is non-corrosive to metals and serves as a preservative to wood structures.

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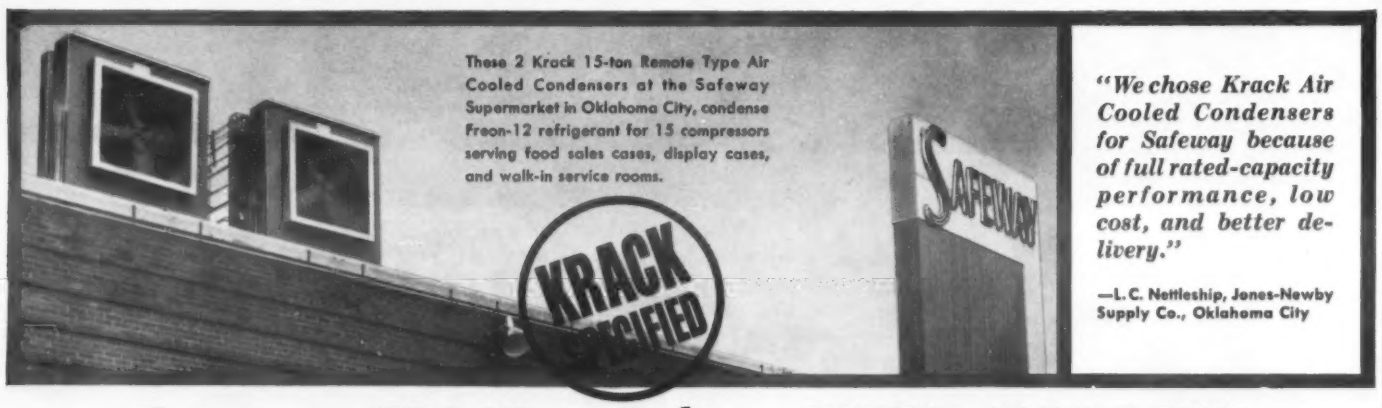
These 2 Krack 15-ton Remote Type Air Cooled Condensers at the Safeway Supermarket in Oklahoma City, condense Freon-12 refrigerant for 15 compressors serving food sales cases, display cases, and walk-in service rooms.
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KRACK

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—L. C. Nettleship, Jones-Newby Supply Co., Oklahoma City

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JIPC Talks Taxes, Jurisdictional Disputes--

(Continued from Page 1, Col. 3)

sociations and the United Association. Newest participating association, elected to membership at the July 11 meeting, is the Pipe Fabricating Institute.

Among other members are the Refrigeration & Air Conditioning Contractors Association, the National Association of Plumbing Contractors, and the Mechanical Contractors Association of America.

T. C. Alexander, president of RACCA, was elected JIPC chairman. Fred Barth, president of the Pipe Fabricating Institute, was elected vice chairman. Other officers are Martin J. Ward, UA, treasurer, and Jerome O. Hendrickson, NAPC, Thomas F. Ryan, MCAA, and William J. O'Neill, UA, re-elected tri-secretaries.

Next JIPC meeting was set for the Fontainbleau hotel in Miami, Fla. on Nov. 18, just prior to the RACCA convention.

At the meeting held recently in Washington, latest developments in the long-standing inter-union problem of "contracting-out" and the performance of construction work by in-plant union members in industrial plants were reviewed by UA General President Peter T. Schoemann.

Schoemann said he had discovered that the United Automobile Workers have formed a "skilled crafts division" as a catch-all union arrangement, similar to the District 50 device used for non-miners by John L. Lewis' United Mine Workers, according to a report on the meeting by the NAPC.

Schoemann regarded this UAW move as an attempt to keep more and more construction work away from building trade contractors and employes.

The JIPC endorsed NAPC's recently-passed convention Resolution A-14. This calls for efforts to prevent further encroachment of AFL-CIO industrial unions into areas of work traditionally held by building trades contractors and skilled construction craft workers.

Douglas Grewer of the Better Heating-Cooling Council reported on the progress made by the BHC in developing a study of electric heat and its impact on the industry.

G. Allen Briggs, NAPC vice president, was named to succeed Irvin L. Rechkemmer, now NAPC treasurer, as a member of the special JIPC subcommittee to develop a temporary plumbing specification. Other members of this group are James Anderson, MCAA; Eugene Bradshaw and William Dodd, UA; and Harvey Hottel, RACCA.

General Chairman Alexander appointed a subcommittee to study and report on suggestions for expanding the market for work ordinarily done by members of participating associations. This subcommittee is composed of William Scott, MCAA past president, chairman, and Dodd of the UA and Barth of the Pipe Fabricators.

UA Research Director Charles Donohue reviewed the present status of so-called "technician training" under the Defense Education Act of 1958. Efforts are continuing, he said, with the Health, Education & Welfare Dept. to keep "technicians" out of jobs which require the full-scale training and experience of building tradesmen in defense industries.

Donohue also discussed the tax liability situation of some contractors regarding payments into union pension funds.

* * *

In a recent newsletter, the NAPC noted that contractors and local associations of contractors whose members are paying into local UA pension funds are urged to check carefully the status of their contributions lest they be individually liable for income taxes on amounts paid in to the funds.

It was pointed out that the matter has been brought to NAPC's attention by Donohue, who has been working on legislative arrangements to relieve contractors from such unexpected obligations, because of an Internal Revenue Service ruling.

Following is Donohue's recounting of the present situation, as written in the UA General Officers' Weekly Newsletter, dated July 13:

"All set for Senate floor action is a little-known bill to correct several inequities in the income tax law, including special relief for contractors finding themselves liable for income taxes on their contributions to particular pension funds.

"Within the United Association the problem first arose when the Internal Revenue Service challenged the tax exemption claimed for the Pipe & Refrigeration Fitters Local 537 Pension Fund in Boston. The contractors and union failed to establish a formal declaration of trust exclusively for pension purposes until sufficient funds had been collected to warrant setting up a system of pension payments. Internal Revenue said the fund did not qualify during this period as an exempt trust for pension purposes under Section 401(a) of the Internal Revenue Code. Contractors could not claim contributions as deductible business expenses for income tax purposes.

"After the formal declaration of trust was established, however, the trust became qualified and contributions made after that date became deductible. In the meantime, many thousands of dollars in back taxes and interest were assessed against these contractors, placing the pension fund itself in jeopardy.

"Congress alone could correct this unfair ruling. Therefore, the United Association general office laid the whole matter before Senator John F. Kennedy of Massachusetts, who then introduced a bill to declare the Local 537 Pension Fund a qualified trust from the time first contributions were made. This bill was approved by the Senate Finance Committee and reported as an amendment to a general tax bill, H. R. 5547, already passed by the House of Representatives. H. R. 5547 is now on the Senate calendar awaiting passage after the present recess. House agreement to the amendment is expected.

"Any other funds facing similar difficulties can still secure similar relief by additional amendments to the bill on the Senate floor. For example, one local union of the United Association, confronted with the same ruling, did not bring the matter to the attention of the general office and failed to receive similar treatment from the Senate Finance Committee. Arrangements have been made, however, to protect the contributions to this local's fund by adding a new amendment to the bill, H. R. 5547, when it comes up for action on the Senate floor.

"If any fund in the United Association needs similar protection from Congress, it is important to do two things at once:

"1. Obtain from Internal Revenue a letter of qualification of the trust under Section 401(a); and

"2. Tell the general office (of UA) about it.

"We will take prompt action securing a protecting floor amendment for the safety of your fund."

'Air Purifiers'--

(Continued from Page 1, Col. 2)

vinced that any owner of an air purifier should be aware of the danger of ozone and constantly on guard against it, and suggests that a person provide proper ventilation in a room containing a purifier; this helps prevent dangerous concentrations of ozone."

He added that "some devices produce a harmful amount of the gas and others do not."

Smith cited the case of an Illinois woman who, he said, slept in a closed bedroom containing an air purifier. In the morning, her eyes were swollen shut, her throat and lungs parched, according to Smith. She was rushed to a hospital, given oxygen, and then hospitalized for two weeks for what doctors called ozone poisoning, the safety director related.

Smith also reported the results of tests he said were conducted by Dr. Herbert Stokinger, U. S. Public Health Service.

Dr. Stokinger found that ozone at low concentrations damaged the lungs of animals quickly and at higher concentrations killed half the mice that were tested, Smith stated.

"Stokinger affirms that although these studies pertain to animals, humans could undergo the same reactions," Smith said.

Welbilt Opening New Warehouses

FARMINGDALE, N. J. — Bonded factory warehouses strategically located in several major cities will expedite shipments of the full line of Welbilt residential and commercial air conditioners and heating equipment, according to Peter J. Dalton, vice president in charge of sales for Welbilt Air Conditioning & Heating Corp.

The fully-stocked warehouses are now located in Atlanta and St. Louis. It is contemplated that warehouses will be set up in Houston, Texas; Kansas City, Kan.; Phoenix; and Detroit.

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*ASRE numbers 11, 12, 13, 14, 21, 22, 113, 114

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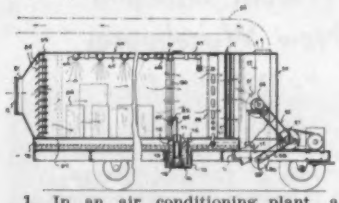
"Prest-O-Lite," "Linde," and "Union Carbide" are registered trade marks of Union Carbide Corporation.

PATENTS

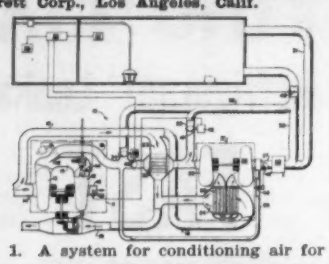
Week of March 22

2,929,223. AIR CONDITIONING UNIT. Joseph W. Joachim, Jr., New Orleans, La.



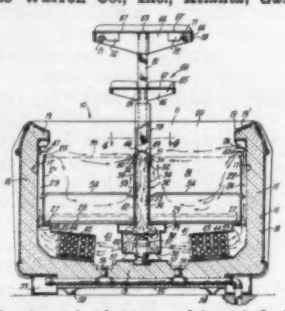
1. In an air conditioning plant, a housing, return air inlet means at one end of the housing, an air discharge blower connected to the other end of the housing and being formed and arranged to discharge conditioned air from said other end of the housing, a water reservoir in the bottom of the housing containing a quantity of water, means to cool the water, a spray nozzle mounted in the upper portion of the housing, conduit means connecting said reservoir to said spray nozzle, a pump in said conduit means. . . .

2,929,224. GAS TURBINE COMPRESSOR DRIVEN AIR CONDITIONING SYSTEM. Robert M. Pickard, Hermosa Beach, Calif., and Alexander Silver, Phoenix, Ariz., assignors to The Garrett Corp., Los Angeles, Calif.



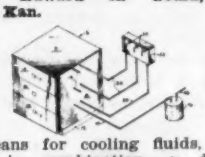
1. A system for conditioning air for an enclosure comprising: a gas turbine compressor for supplying air under pressure; means for conducting air from said compressor to an enclosure; means for conditioning said air prior to delivery thereof to said enclosure; by-pass means around said conditioning means; a plurality of valve means including a valve member in said conducting means between the discharge of said compressor and the said conditioning means and a valve member in said by-pass means....

2,929,227. TWO SIDE REFRIGERATED DISPLAY CASE. Julius H. Rainwater, Atlanta, Ga., assignor to The Warren Co., Inc., Atlanta, Ga.



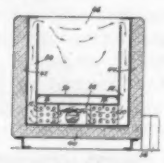
1. An island type refrigerated display case having a bottom and side and end walls defining an elongated, upwardly opening space therein, bottom panel means dividing said space into a lower refrigeration compartment and an upper frozen product zone, each extending substantially the entire length of the display case. . . .

2,929,228. CABINET COOLING MEANS. Edward A. Gould, Jr., Wichita, Kan.



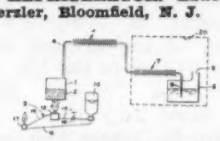
11. Means for cooling fluids, comprising, in combination, a drawer mountable in a cabinet, a heat exchange assembly mountable in said drawer, said heat exchange assembly having a lower cooling coil and an upper cooling plate having a fluid conduit therethrough, said coil and plate being connected together in fluid flow relation and spaced from each other....

2,929,229. EVAPORATOR-BLOWER UNIT FOR REFRIGERATED EQUIPMENT. Wayne H. Detwiler, Philadelphia, Pa., assignor to C. V. Hill & Co., Inc., Trenton, N. J.



1. An evaporator-blower unit for operation at temperatures below freezing, comprising top and bottom plates arranged in generally parallel relation, side members connected to said top and bottom plates and cooperating therewith to define an air duct having an inlet end and an outlet end, a blower located in said air duct, said blower being mounted on a supporting plate extending generally parallel to said top and bottom plates, a baffle extending from said supporting plate to the top plate adjacent the blower for directing air from said inlet end of the air duct to the intake side of the blower, a baffle on the opposite side of said blower extending from the supporting plate to the bottom plate for directing air from the outlet side of the blower. . . .

2,929,230. PORTABLE OPEN SYSTEM REFRIGERATOR. Lawrence J. Schmerzler, Bloomfield, N. J.

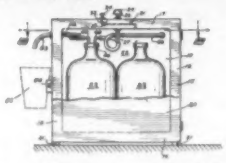


1. In a desorption-sorption refrigerating apparatus operating with a liquid refrigerant in conjunction with and absorbent material and including, a generator-absorber, heating means for said generator-absorber, means for condensing the refrigerant during the desorption cycle, and means for evaporating the refrigerant during the sorption cycle, the combination therewith of an open receiver unit and a single conduit connected from said generator-absorber through said condensing means and through said evaporating means and terminating in said open receiver unit. . . .

2,929,408. FIN CONSTRUCTION. Kenneth A. Weatherwax, Lewis R. Smith, and John F. Pearson, Jackson, Mich., assignors to Acme Industries, Inc., Jackson, Mich.

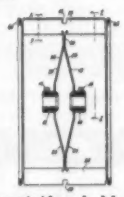
A heat exchange tube for conducting a refrigerant comprising an outer tubular member of relatively soft contractable copper and an internal fin member disposed in said tubular member, said fin member being an aluminum alloy harder and more resilient than the copper material of said tubular member. . . .

2,929,535. DISPENSER FOR BEVERAGES. Earl R. Fairbanks, Hudson, Wis., assignor to United Refrigerator Co., Hudson, Wis.



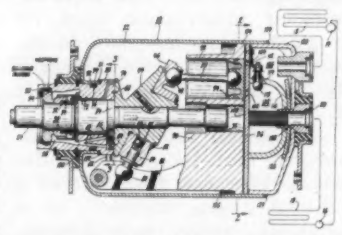
1. In a dispenser, an air tight container for liquid to be dispensed, a pump for providing air under pressure, an electric motor for operating said pump, a circuit for said electric motor, an air inlet tube affording communication between said pump and an upper portion of the interior of said container, a dispensing spout, a liquid outlet tube affording communication between a lower portion of the interior of the container and said dispensing spout. . . .

2,929,549. BLOWER WHEEL AND METHOD OF MAKING. Charles A. Hathaway, Litchfield, and Stephen W. Klonoski, Torrington, Conn., assignors to The Torrington Mfg. Co., Torrington, Conn.



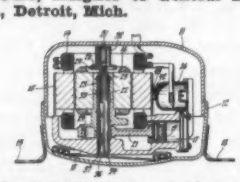
1. In a centrifugal blower wheel, the combination of a hub means rotatable about a central longitudinal axis and adapted for mounting on a rotatable shaft, first and second generally radial supporting discs having their inner portions rigidly connected with the hub means, said discs being connected with each other near their peripheries and said first disc being formed near its periphery with an annular series of equally spaced circularly extending portions. . . .

2,929,551. REFRIGERATING APPARATUS. John H. Heidorn, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



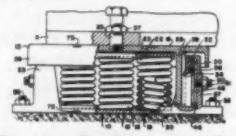
1. In a refrigerant compressor, a cylindrical casing element having openings in the ends thereof, a shaft bearing assembly removably disposed in one of said openings, seal means between said assembly and said casing element for preventing the escape of refrigerant from said casing or the introduction of air into said casing, said seal means comprising a first neoprene O ring seal disposed adjacent the refrigerant side and a second silicone rubber O ring seal disposed adjacent the outside of said casing. . . .

2,929,552. MOTOR-COMPRESSOR SUSPENSION. Ralph McGregor, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



1. In combination, a sealed casing, a unit located in said casing including a motor, a compressor, a hollow upright bearings having its lower end stationarily secured to a part of said compressor and a shaft surrounding and revolvable about said bearing by said motor for driving the compressor, means mounting said unit within said casing, said means comprising opposed elastic members attached to said unit and connected to opposite sides of said casing and an element extending through said hollow bearing. . . .

2,929,592. VIBRATION MOUNTING. Theodore W. Spaetgens, South Burnaby, B. C., Can.



1. In a vibration mounting for equipment subject to vibrations during use and having a base to be mounted on a foundation, pairs of spaced and substantially parallel members, one pair of said members projecting up-

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HEAT PUMP Field Engineer: Seven years experience with General Electric Co. Being terminated due to reduction in personnel. Principal responsibilities included the training of distributors, dealers, and utility personnel in application, installation, service and consumer relations as related to the sale of packaged heat pumps for commercial and residential use. Desire a field sales or sales engineer position with a manufacturer aggressively engaged in the heat pump market. Will accept straight commission, or salary and commission arrangement. Age 37, B.S.M.E., Married. WALTER PURCELL, #99 Spanish Fort Blvd., New Orleans, La.

FLORIDA—SALES engineer, mechanical degree, desires relocate to Orlando-Tampa area with manufacturer or distributor. Over twelve years diversified experience developing dealer organization, sales, design, application, installation and service of air conditioning, heating and heat pump systems. Visiting area early August. BOX A6588, Air Conditioning, Heating & Refrigeration News.

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REPRESENTATIVE WANTED in your territory. From your desk you can earn a substantial addition to your income. Only written contacts with your clients! Write for particulars and further details to VKK-OFFICE, Vienna 66, P.O.B. 128, Austria.

CALIFORNIA—SAN FRANCISCO Bay Area—Air conditioning, refrigeration and appliance sales and service business for sale. Fast growing state—year round activity. Good opportunity—needs strong sales management. Nationally known franchises—complete service facility — trucks — shop — etc. Sales over ½ million 1959. BOX A6584, Air Conditioning, Heating & Refrigeration News.

DISTRICT SUPERVISOR — Commercial refrigerator manufacturer with national distribution of refrigerated display equipment for supermarkets and additional products to make a fully rounded commercial line, needs an experienced supervisor to headquarter in Birmingham, Alabama, or New Orleans, for coverage of surrounding areas. Excellent remuneration plan where earnings are limited only by ability and results. Send brief resume of experience, etc., to BOX A6586, Air Conditioning, Heating & Refrigeration News.

SERVICE MANAGER — National organization needs man with technical and administrative ability. Mobile refrigeration field. A real opportunity for the right man. Salary open. BOX A6591, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT WANTED

COPELAMETIC PARTS: Will buy your surplus parts on Copelametics. Need discharge and suction valve reeds, two to ten horse-power models. Give description, quantity and price. UNITED REFRIGERATION CORPORATION, 514 W. 12th St., Los Angeles 15, California.

EQUIPMENT FOR SALE

MOTORS-DELCO-Century 3 phase 1½ h.p. Just removed from central refrigeration system. Guaranteed. $17.50 each. FOB Washington, D.C. Also 150 GE NC6H refrigerators from deluxe apartment. $30. Low cost hauling. PEERLESS SALES CO., 2237 Georgia Ave., Washington, D. C.

ATTENTION REFRIGERATION Servicemen. Send for catalog listing values in refrigeration and air conditioning parts, relays, capacitors, compressors. Savings up to 50%. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

BUSINESS OPPORTUNITIES

ESTABLISHED REFRIGERATION & air conditioning in Southern California. All equipment including trucks. Priced for cash. Walk in and go to work. By owner. Available because of illness. BOX A6587, Air Conditioning, Heating & Refrigeration News.

ONE OF the oldest refrigeration companies in Southern California, established 24 years in Los Angeles. Have two contracts on air conditioning, that will pay for the business. Large stock of equipment. The trade name is a "natural", legally registered. Nationally advertised, equipment, good will, contracts, all for $15,000. BOX A6589, Air Conditioning, Heating & Refrigeration News.

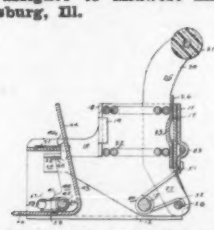
ATTENTION: MANUFACTURERS of air conditioning equipment. A large Southwest manufacturer wishes to enter the air conditioning field by acquiring control of an existing company. If you are interested please submit a resume of your operations to BOX A6590, Air Conditioning, Heating & Refrigeration News.

MISCELLANEOUS

MECHANICAL ESTIMATOR'S Guide, 1960, new well organized estimator, solid, up to date pricing labor and material any size air conditioning project—piping, chillers, insulation, towers, charcoal filters, blowers, etc. Eliminates waste hours, for high caliber owners and engineers, a profit standard, plastic bound. $6.00. Write TECHNICAL GUIDE PUBLICATIONS, Dept. N, 224 N. E. 59th Street, Miami, Florida.

wardly from a foundation and one pair of said members projecting downwardly from an equipment base, the upwardly-projecting members terminating short of the base and the downwardly-projecting members terminating short of the foundation. . . .

2,929,650. REFRIGERATOR DOOR LOCK. Herbert D. Squire, Galesburg, Ill., assignor to Midwest Mfg. Corp., Galesburg, Ill.



1. In a latch mechanism adapted to engage a keeper, said latch mechanism having a housing adapted to be mounted on a support, a latch bolt carriage pivotally mounted on said housing and pivotable with respect thereto between a latching position and a relased position, a latch bolt pivotally mounted on said carriage and pivotable with respect thereto about an axis parallel to and laterally displaced from the pivotal axis of said bolt carriage, and a main latch spring resiliently urging said latch bolt in a keeper engaging

fast

COLD WATER SERVICE

... OR PRE-COOL WATER FOR ICE-CUBE-MAKING MACHINES TO BOOST EFFICIENCY AND INCREASE CAPACITY

Install beneath serving-counter, in basement—or any convenient location!

WITH Temprite REMOTE drinking water coolers

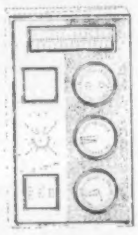
Restaurant rated for FAST cold water service . . . Temprite Remote Coolers deliver at a *just-right temperature* . . . without the *bother of ice cubes*. Enables you to set up EXTRA water stations (served from the same unit) to reduce wasted motion and extra steps. Fast water cooling service means faster food service and stepped-up turnover!

TEMPRITE PRODUCTS CORPORATION
Box 72-D, East Maple Road
Birmingham, Michigan
Send me data on Temprite Remote Coolers
Company name_____
My name_____
Address_____
City_____ State_____

direction with respect to said carriage. . . .

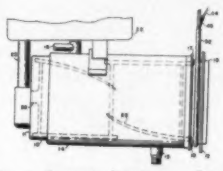
DESIGNS

187,505. AIR CONDITIONER CONTROL PANEL. Joseph B. Federico, Buffalo, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware.



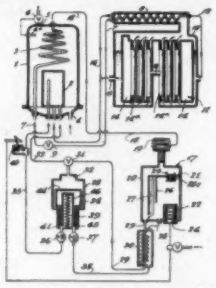
Week of March 29

2,930,203. TEMPERATURE CONTROL SYSTEM FOR FREEZERS. Lawrence E. Koch, Beloit, Wis., assignor to Louis A. M. Phelan, Rockton, Ill.



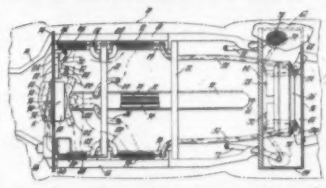
1. In a freezer having a beater for discharging a product therefrom; a source of electrical power, a beater driving means and a refrigeration means connectible to said power source, a two-position switch electrically connected to said power source and movable to one position to thereby connect said beater driving means and said refrigeration means to said power source, a temperature sensitive element for urging said switch to said one position when said element reaches a predetermined temperature, a resistance heater secured to said element and connectible to said power source through said switch when the latter is moved to another position to thereby heat said element.

2,930,204. REFRIGERATOR. Heinrich Lang, Frankfurt am Main, Germany.



1. In a continuously operating absorption refrigeration system, including an absorber, a generator for generating refrigerant vapor from rich solution, leaving weak solution, and a condenser, operating means of the character described, comprising: first conduit means, for refrigerant vapor, connected between an outlet of said generator and said condenser; second conduit means, for weak solution and refrigerant vapor. . . .

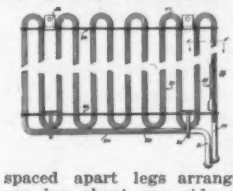
2,930,206. VEHICLE AIR CONDITIONING SYSTEMS. Robert A. Herberger, Lockport, N. Y., assignor to General Motors Corp., Detroit, Mich.



1. An air conditioning system for an automotive vehicle having a drive shaft cover extending the length of a passenger compartment, said system employing said cover as a duct, an evaporator and blower cooperatively arranged at one end of said compartment to cool outside air and direct the same into said compartment by way of said duct, a condenser associated with a blower arrangement in a rear portion of said vehicle and adapted for lowering the heat content of coolant used in said evaporator, restricted means for conducting air from said compartment mixed with ambient air back to the atmosphere by way of said condenser, and the arrangement being such as to maintain said passenger compartment above atmospheric pressure. . . .

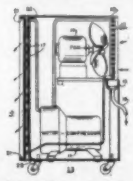
2,930,207. HEATER CLAMPING ASSEMBLIES. Louis H. Carl, William B. Herndon, Jr., and Gene F. McConnell, Evansville, Ind., assignors to Whirlpool Corp., St. Joseph, Mich.

1. In a refrigerating device including an evaporator having a refrigerant containing portion and a flange in heat transfer relationship with the refrigerant containing portion, means for securing a heating element in heat transfer relationship with said evaporator, comprising a clamp provided



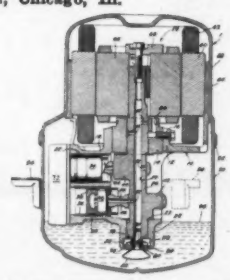
with spaced apart legs arranged to have one leg about one side of the flange and the other leg abut the heating element to clamp the heating element against the other side of the flange. . . .

2,930,208. DEHUMIDIFICATION APPARATUS. Wallace R. Lyman, Springfield, Mass., assignor to Westinghouse Electric Corp., East Pittsburgh, Pa.



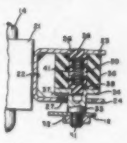
The combination with a self-contained dehumidifier adapted to rest on the floor of the space in which it is used and including a cabinet having an opening in a vertical wall thereof, a refrigeration circuit including an evaporator for cooling and dehumidifying air, and air translating apparatus for moving air over said evaporator and discharging air from said cabinet through said opening, of an expanded metal sheet carried by said cabinet and closing said opening. . . .

2,930,522. VAPOR LOCK PREVENTING MEANS FOR COMPRESSOR LUBRICATION SYSTEM. Everett W. Reichard, West York, Pa., assignor, by mesne assignments, to Borg-Warner Corp., Chicago, Ill.



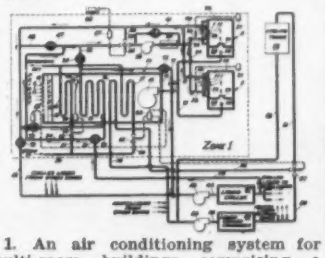
2. Apparatus of the class described comprising a casing; a refrigerant compressor mounted within said casing, said compressor including a rotatable vertical shaft having a bore therein and radial ports through a wall thereof, and spaced bearings surrounding said shaft and ports; a centrifugal pump formed adjacent the lower end of said shaft and having a lubricant intake; a lubricant containing sump formed in the lower end of said casing and containing a lubricant submerging said pump intake. . . .

2,930,556. REFRIGERATING APPARATUS. Elmer L. Horlacher, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



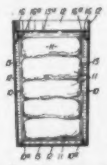
1. A mounting for a casing containing an operable element adapted to be started and stopped including a pair of resilient devices attaching the casing at two equal spaced apart points therearound to a support exteriorly thereof, each of said devices comprising a U-shaped bracket having the base of the U thereof secured to an outer exposed part of said casing with the legs of said bracket extending laterally therefrom one above another, the upper leg of said U-shaped bracket having an opening therein and the lower leg thereof having an opening therein aligned with the opening in said upper leg. . . .

2,930,593. AIR CONDITIONING SYSTEMS. Robert D. Blum, York, Pa., assignor to Borg-Warner Corp., Chicago, Ill.



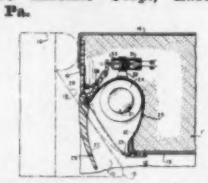
1. An air conditioning system for multi-room buildings comprising a plurality of heat-exchange coils in air communication with respective rooms; means for delivering primary air to said rooms; means for flowing room air over said coils in heat-exchange relation therewith; conditioning means for treating said primary air and including a chilled liquid coil and a heated liquid coil; a refrigeration system providing a chilled liquid and a heated liquid; means for supplying said chilled liquid to said room heat-exchange coils and to said chilled liquid coil. . . .

2,930,707. PRESERVATION OF COMMODITIES BY REFRIGERATION. Raymond Eddie Linnell and Peter Robert Linnell, Northhampton, England.



1. A method of preserving perishable commodities by refrigeration which consists in placing the commodity in an inner container which is like a basket in that while not entirely rigid, it is of coherent shape and has liquid-permeable walls, locating the inner container in spaced relation within an outer container having solid walls and whose shape corresponds generally with that of the inner container with the spacing being provided by distance pieces on one of the containers. . . .

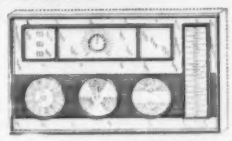
2,930,885. REFRIGERATION APPARATUS. Herbert A. Ehrenfreund, Longmeadow, Mass., assignor to Westinghouse Electric Corp., East Pittsburgh, Pa.



1. The combination with a refrigerator cabinet including a body having a door opening, and a door for closing said opening, said door having a portion thereof projecting into a region of said opening when the door is in its closed position, of an electric lamp embedded in a recess in said cabinet body near said door opening, the recessed position of said lamp being such that light therefrom is directed outwardly rather than inwardly of said cabinet body, a reflector member carried by said cabinet body adjacent said recess. . . .

DESIGNS

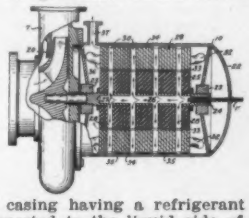
187,565. AIR CONDITIONER CONTROL PANEL. Joseph A. Rinaldi, Palisades Park, N. J., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware.



REISSUES

24,802. REFRIGERATED HERMETICALLY SEALED MOTORS. Erich J. Kocher, Milwaukee, and Whitney I. Grant, Mukwonago, Wis., assignors to The Vilter Mfg. Co., Milwaukee, Wis., a corporation of Wisconsin.

8. In a refrigerating system having an evaporator and a condenser cooperable therewith, a compressor for withdrawing refrigerant from the evaporator and for delivering the same into the condenser, and an electric motor having a rotor drivingly connected to said compressor and a stator surrounding said rotor, said motor rotor and stator being confined in a hermetically



sealed casing having a refrigerant inlet connected to the liquid side of the condenser and an outlet connected back into the refrigerant system, and said motor rotor being provided with a coaxial liquid refrigerant passage communicating with said casing inlet while both said rotor and stator have therein alineable refrigerant conduits radiating from said passage and connecting the latter with said casing outlet.

Vacations

Bendix-Westinghouse Aug. 29-Sept. 4

EVANSVILLE, Ind. — The plant of the Evansville Div., Bendix-Westinghouse Automotive Air Brake Co., will be closed for annual inventory and vacation from Aug. 29 through Sept. 4, it was announced by D. J. Wood, general sales manager.

Although no routine shipments will be made during the shutdown, emergency requirements will be shipped, he said.

La Crosse Cooler Aug. 22-Sept. 5

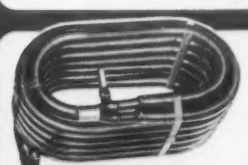
LA CROSSE, Wis. — La Crosse Cooler Co. announced that its plant will be closed for annual vacation from Aug. 22 through Sept. 5.

A skeleton crew will be maintained to handle urgent orders during this period. There will be no production in the factory so only stock equipment can be shipped, it was noted.

ENGINEERED BY EDWARDS

AIRVEC
The completely silent Air Cooled Condenser
Never needs cleaning

WRITE FOR BULLETIN AV-4



WATER COOLED COAXIAL CONDENSERS
Domestic and sea water models
Reduce costs 40% . . . Reduce condenser water 35% . . . Reduce refrigerant charge . . . Stabilize capillary performance . . . Compact shapes.

WRITE FOR BULLETIN TT-653

MOTORIZED VALVES
For chilled water cooling systems and for heating systems . . . 100% positive shut-off . . . Compact . . . Low cost . . . Low Voltage . . . No current draw when open.

WRITE FOR BULLETIN MV-1

EDWARDS ENGINEERING CORP.
938-2 Alexander Ave., Pompton Plains, N. J.
TEmple 5-2808

"One of the nation's largest manufacturers of Residential and Commercial Boilers, Baseboard and Steel-Fin Radiation, Motorized Valves, Air and Water-Cooled Refrigerant Condensers."

First Quarter Unitary Conditioner Sales--

ARI UNITARY AIR-CONDITIONER SECTION'S CONDENSED SUMMARY BY SIZE OF MANUFACTURERS' SHIPMENTS

FIRST QUARTER (January-March, 1960) —By Condenser-Type—

Size	Air or Evaporatively Cooled	Water Cooled	Total Units	% Change from 1959
Under 27,000 B.t.u./hr.	8,258	185	8,443	0
27,000-32,999 B.t.u./hr.	4,592	23	4,615	— 10
33,000-41,999 B.t.u./hr.	18,557	1,856	20,413	+ 5
42,000-53,999 B.t.u./hr.	6,638	1,639	8,277	+ 46
54,000-64,999 B.t.u./hr.	7,457	3,664	11,121	+ 23
65,000-96,999 B.t.u./hr.	3,401	1,663	5,064	+ 12
97,000-134,999 B.t.u./hr.	1,158	1,305	2,463	— 10
135,000-184,999 B.t.u./hr.	387	633	1,020	— 13
185,000-249,999 B.t.u./hr.	229	433	662	+ 35
250,000-319,999 B.t.u./hr.	49	338	387	+ 1
320,000-379,999 B.t.u./hr.	65	247	312	+ 74
380,000 B.t.u./hr. & over	5	74	79	+ 55
Total	**50,796**	**12,060**	**62,856**	**+ 10**

This condensed summary by size includes shipments of:

1. Air conditioners (except window and wall types) with or without condensers and refrigeration chassis.
2. Year-round air conditioners—with or without condensers.
3. Heat pumps (except room air conditioners) self-contained and other than self-contained.
4. Split systems—air conditioning condensing units **only**. It does **not** include shipments of air conditioning coils with or without blowers.

EXPORT SHIPMENTS—The total figure includes export shipments of 1,910 units for January-March, 1960.

* * *

Reporting companies: Airtemp Div., Chrysler Corp.; Amana Refrigeration, Inc.; American Furnace Co.; American-Standard Air Conditioning Div.; American-Standard Industrial Div.; Arkla Air Conditioning Corp.; Armstrong Furnace Co.; Carrier Air Conditioning Co. (including all mfg. div.); Cleveland Steel Products Corp.; Cobell Industries, Inc.; Coleman Co., Inc.; Columbia Special Co., Inc.; Coolerator Div., McGraw-Edison Co.; Crane Co.; Plumbing, Heating & A/C Group; Curtis Mfg. Co.

Fedders Corp.; Florida Warren Corp.; Forston Co.; Fraser & Johnston Co.; Frick Co., Inc.; Friedrich Refrigerators, Inc.; Gaffers & Sattler Div., Utility Appliance Corp.; General Electric Co.; Goettle Brothers, Metal Products Inc.; Hall-Neal Furnace Co.; Heat-X, Inc.; Heil-Quaker Corp.; Holly-General Co.; Hupp Corp.; Perfection Industries, Typhoon Air Conditioning Co., Typhoon Heat Pump Co.

International Heater Co.; International Metal Products Div.; Iron Fireman Mfg. Co.; Janitrol Heating & Air Conditioning Div.; Laurel Products Corp.; Lennox Industries, Inc.; Majestic Co., Inc.; Mathes Co.; Melchior, Armstrong, Dessau Co., Inc. (beginning with March); Miami Products, Inc.; Mueller Climatrol Div., Worthington Corp.; C. A. Olsen Mfg. Co.; Peerless Corp.; Philco Corp.; Rheem Mfg. Co.

Southwest Mfg. Co.; Stewart-Warner Corp., U. S. Machine Div.; Thatcher Furnace Co.; Therm-Air Mfg. Co.; Trane Co.; Tuck-aire Furnace Co.; United States Air Conditioning Corp.; Westinghouse Electric Corp.; Williamson Co.; Worthington Corp.; York Div., Borg-Warner Corp.

Blackouts--

(Continued from Page 1, Col. 1)

fire department investigators had offered the possibility that the blower had been operating on "exhaust" and that this had contributed to the lowering of the oxygen supply.

The six men involved were directors of De Rensis & Co., and had been in the room from late afternoon until after midnight. When they left the room they all collapsed, but one gained consciousness long enough to call the fire department. They were taken to a hospital for observation, but were released a short time later.

Dreamers!!

WASHINGTON, D. C. — In adjudicating three local labor disputes at a recent meeting here, the Industrial Relations Council of the Plumbing & Pipe Fitting Industry, in one case, rejected a clause suggested by the Associated Plumbing & Heating Contractors of Colorado Springs proposing that "errors in workmanship made by the workman may be corrected by him on his own time."

(Continued from Page 1, Col. 1)

ported to ARI represent about 90% of the industry total.

The shipment figures include unitary heat pumps, but do not include room air conditioners, reversible or otherwise.

Self-contained unitary heat pumps shipped in the first quarter of this year — 5,172 units—were 40% ahead of shipments of these items in January-March, 1959, ARI reported. Of heat pumps shipped, almost 70% were self contained.

A summary is at the left.

E. T. Coles Named

TORONTO, Ont., Can.—A. H. Hills, vice president and general manager of Penn Controls Ltd., announced the appointment of E. T. Coles as sales manager for Canada.

N. Y. Strike--

(Continued from Page 1, Col. 3)

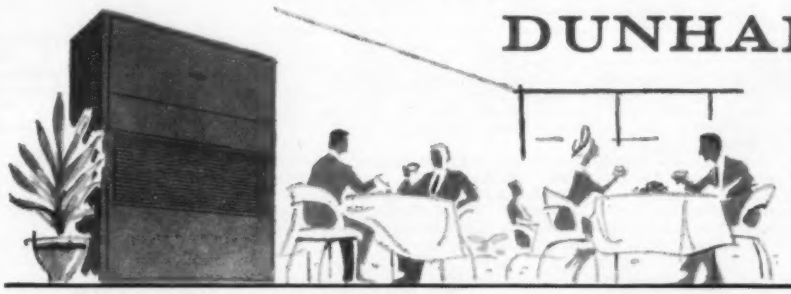
dimmed when union representatives increased their demands for wage increases and other benefits at the last bargaining session. Representatives of the Mechanical Contractors Association who are negotiating with the union now declare that the rank-and-file of the journeyman membership are not aware of the offers made by the employers and other issues in the situation, and they believe that no settlement is likely until the journeymen are properly informed.

The strike situation, and its effect on the construction industry in New York City, has been further complicated by the action of Local 2 of the Plumbers and Pipefitters union, which voted for a strike, although four units of the Plumbers union had recently ratified a new contract. However, it is thought that any walkout of the plumbers is likely prior to a meeting which has been called for early next week.

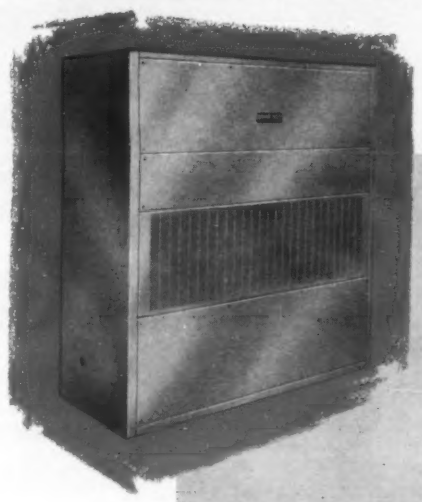
As pointed out previously by the NEWS, while the strike of the steamfitters and sheet metal workers has shut down work on new construction, it has not had any serious effect on installations in existing structures or on smaller air conditioning jobs, or on air conditioning and refrigeration service work. Much of the work in these latter categories is performed by mechanics who are members of other unions.

Bob Forbush Guest Lecturer at College

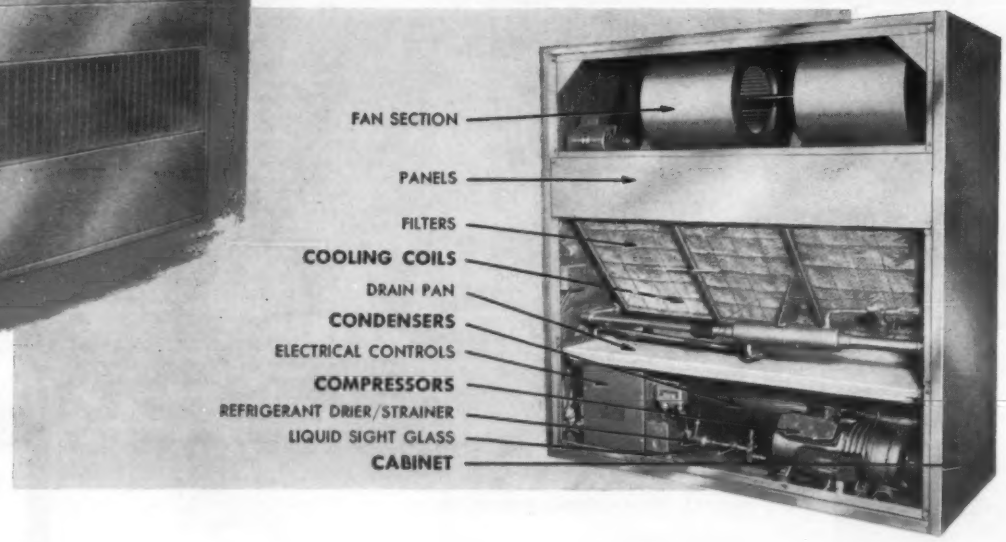
EL MONTE, Calif.—Bob Forbush, manager of D & D Truck Refrigeration here, has been chosen as guest lecturer on truck refrigeration at the 1961 California Polytechnic workshop.



DUNHAM-BUSH 'PAC'



Proves how to properly package air conditioning



Important to contractors and specifiers is peak performance of Dunham-Bush "PAC" Packaged Air Conditioners, achieved through pre-engineered major components. Other manufacturers, using components from diverse sources, must attempt to improvise balance. But Dunham-Bush manufactures and designs the motor compressor, condenser, evaporative coils and cabinet specifically for "PAC". This "one source-one responsibility" is evident in dependable operation and customer satisfaction.

"PAC" units are packaged for use, on-premises or remotely installed, in restaurants, stores, offices, clubs, banks, factories, depots or wherever high capacity, self-contained air conditioning units are required. Attractive finish harmonizes with decor practically anywhere.

"PAC" is available in 10, 15, 20, 25 and 30 h.p. capacities.

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